MIDDLE TENNESSEE

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Middle Tennessee Region

Generated by the TWRA GIS Lab, March 2006 (jj)

IMPORTANT AQUATIC HABITAT AREAS OF MIDDLE TENNESSEE

Locations - Important aquatic habitat areas are located in the channel and floodplains of several major rivers and smaller streams throughout the Middle Tennessee Region as depicted on the following map.

Description of Properties - The areas of interest would include a stream or river channel, riparian zones, and floodplains. Land use varies across the region including urban development, agricultural lands, and bottom land hardwood forests. Agricultural land is most common, and is commonly used for livestock, haying, and some row crops.

Significance - Conservation of these waterways and their adjacent lands is needed to maintain the high biodiversity of aquatic species in these rivers. For example, protection of the Duck River would provide protection for hundreds of aquatic species in the most diverse aquatic ecosystem in North America. Other areas on the map are important to just one or two extremely rare species, such as the federally listed Nashville crayfish which inhabits the Mill Creek watershed. These areas have been identified by several conservation agencies (e.g. TWRA, TNC, WWF) as warranting the highest priority for conservation needs. Most of these species are endemic to this region, meaning they can be found nowhere else in the world. Several Tennessee species have been lost, and without proactive measures to protect habitat, more losses are expected.

Land Management Strategy - Biologists have identified the corridor along these waterways as critical habitats. Although rivers are threatened by stressors throughout the watershed, these lands in the floodplain have the greatest ability to protect aquatic resources. The goal of land management projects would be to establish or protect wide forested buffer zones along the river corridor. Projects would also promote the use of best management practices for farming, forestry, and construction projects.

Lands that need to be acquired - Given the large area of these waters and floodplains, it is not possible to target all the important areas for acquisition. Working with existing landowners on projects designed to improve habitats may be more effective. For example, the NRCS could focus on these areas using Farm Bill Programs to improve aquatic habitats.

Potential Partners – USFWS,NRCS, TNC, Word Wildlife Fund, Tennessee Scenic Rivers Association, and local watershed organizations.

Important Aquatic Habitat Areas for the Middle Tennessee Region

Generated by the TWRA GIS Lab, August 2006 (jj)

ARCHAEOLOGICAL SITES – MIDDLE TENNESSEE

Location - Bedford, Cannon, Cheatham, Coffee, Davidson, Dickson, Giles, Hickman, Lawrence, Lewis, Lincoln, Macon, Marshall, Maury, Montgomery, Moore, Robertson, Rutherford, Smith, Sumner, Trousdale, Williamson, and Wilson counties.

Description - This large 23-county area covers portions of three physiographic regions, the Western Highland Rim, the Central Basin, and the Eastern Highland Rim. There is much variety in the kinds of terrain and environmental conditions found, and consequently much variety in prehistoric and historic-period cultural resources. The northern portion of the area is bisected by the Cumberland River, which was a major artery and draw for settlement during late prehistoric and early historic periods. Other major water courses to the south are the Harpeth, Duck, and Elk rivers and their tributaries.

Prehistoric Sites - Prehistoric archaeological sites recorded within these three physiographic regions are classified into four major time periods: (1) Paleo-Indian, 10,000 B.C. to 8000 B.C.; (2) Archaic, 8000 B.C. to 1500 B.C.; (3) Woodland 1500 B.C. to A.D. 800; and (4) Mississippian, A.D. 900 to A.D. 1500. These sites range in size and complexity from relatively small Paleo-Indian and Archaic camps to substantial Mississippian mound centers.

As with other regions of the state, the prehistoric sites included in the attached table represent significant cultural resources in danger of destruction due to a variety of man-made (agriculture, construction) and natural (erosion) forces. The THCP will provide an important means to acquire some of these non-renewable resources before they are lost forever.

Numerous Mississippian period mound centers once existed across this region. A few of these sites have survived the destructive forces mentioned above, although the threat of destruction is always present. One example is the Rutherford-Kizer mound center (40SU15) located on Drakes Creek in Sumner County. The southern one-half of this large site was severely disturbed by subdivision development. However, the northern one-half of this site is privately owned and currently in pasture. Acquisition of this northern portion is necessary before the owners decide to sell the property for subdivision development. Another example is the Pack site (40CH1) in Cheatham County. The future of this large Mississippian mound center along the Harpeth River is unclear due to the recent deaths of the aged landowners who protected the site. This site is clearly related to the adjacent Mound Bottom mound center owned by the State of Tennessee. This relationship, however, has yet to be adequately defined.

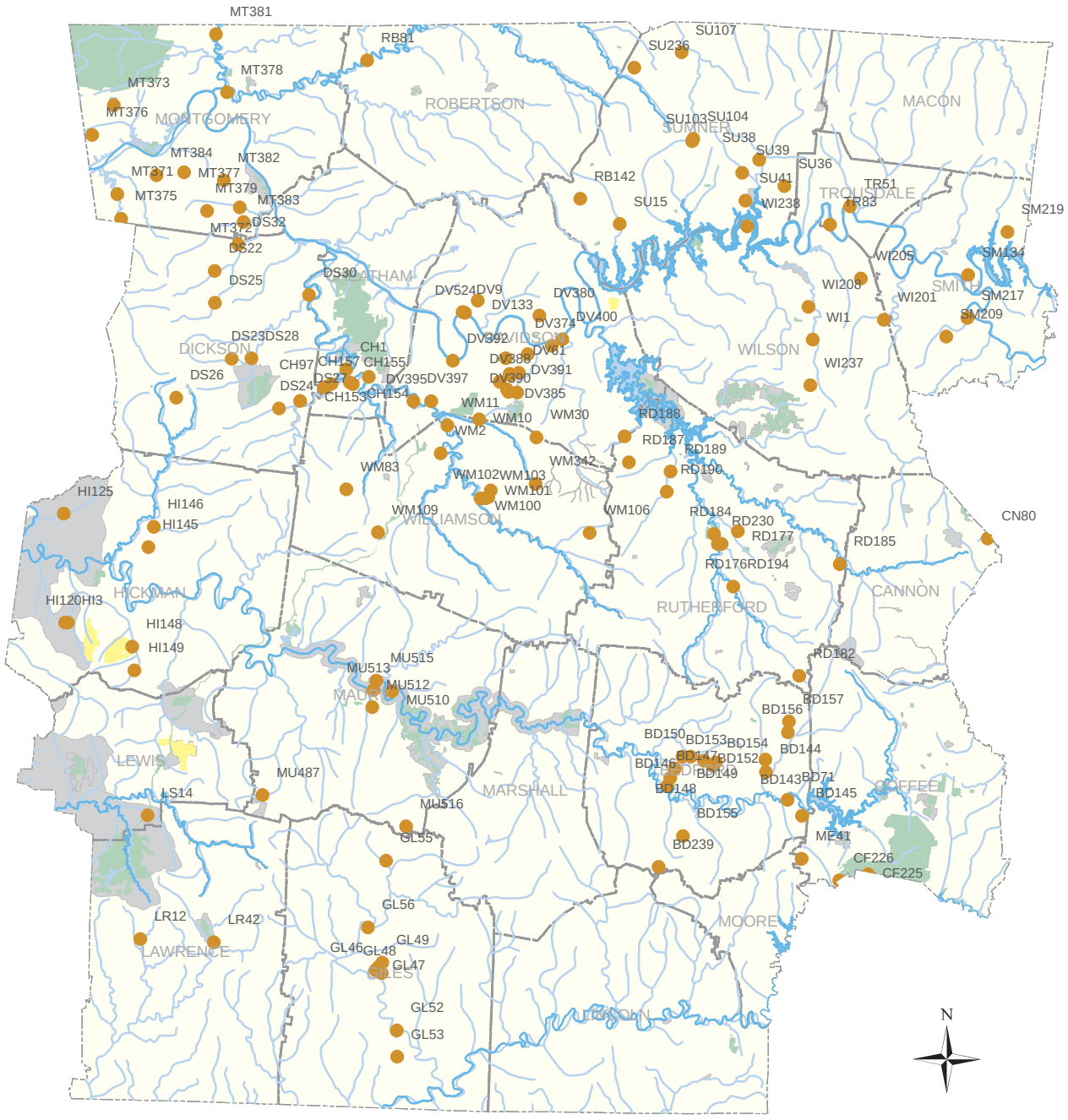
Historic-Period Sites - Historic-period settlement in the northern portion of Middle Tennessee began in the 1780s, and the rest of the area was open for settlement by Euro-Americans by the early 1800s. A few important sites relating to this early settlement period are included on the attached table. As was the case for the THCP's Tennessee River area, the Western Highland Rim portion of Middle Tennessee played an active role in the historic production of iron. The Tennessee Division of Archaeology's 1980s

survey of cultural resources related to the Western Highland Rim iron industry found a majority of the relevant sites in the counties of Montgomery, Dickson, and Hickman. The impact of the Civil War was enormous in Middle Tennessee. Beginning with the Federal occupation of Nashville in early 1862 there was continuous military activity by both Confederate and Union forces throughout the area for the duration of the war. Sites relating to this activity, including such things as troop encampments, battlefields, railroad defenses, and a variety of fortification types, are numerous but extremely threatened and in need of preservation actions. One other major military presence in Middle Tennessee occurred in connection with World War II. From 1942 to early-1945 at least 850,000 soldiers participated in the training exercises know as the Tennessee Maneuvers, carried out over a 21 county area surrounding 2nd Army headquarters, which was on the campus of Cumberland University in Lebanon (Wilson County). A recent Division of Archaeology site survey project has focused on this subject, and some of the more important sites are included on the table.

Lands Protection Needs – 3,626 acres at an estimated cost of $15,620,000.

Potential Partners - The Archaeological Conservancy, Tennessee Council for Professional Archaeology, Tennessee Wars Commission

Historic Archaeological Sites and Prehistoric Archaeological Sites for the Middle Tennessee Region



- Historic & Prehistoric Archaeological Sites
- Areas of Interest
- Public Lands
- Other Protected Lands
- Major Rivers and Reservoirs
- Middle Tennessee Counties

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County	Site Number	Estimated Acreage	Name
Bedford	40BD71	15	Duck River Blockhouse (CW)
Bedford	40BD143	185	Wartrace Camps (CW and WWII)
Bedford	40BD144	5	Garrison Fork Blockhouse (CW)
Bedford	40BD145	10	Norman's Creek Blockhouse (CW)
Bedford	40BD146	5	Shelbyville Defenses (CW)
Bedford	40BD147	5	Shelbyville Defenses (CW)
Bedford	40BD148	20	Shelbyville Defenses (CW)
Bedford	40BD149	15	Shelbyville Defenses (CW)
Bedford	40BD150	12	Shelbyville Defenses (CW)
Bedford	40BD152	5	Shelbyville Defenses (CW)
Bedford	40BD153	5	Shelbyville Defenses (CW)
Bedford	40BD154	10	Shelbyville Defenses (CW)
Bedford	40BD155	5	Shelbyville Defenses (CW)
Bedford	40BD156	20	Shelbyville Defenses (CW)
Bedford	40BD157	150	Shelbyville Defenses (CW)
Bedford	Field # BD-11	140	Bellville Encampment (WWII)
		0	
Cannon	40CN80	5	Jones / Nash Pottery
		0	
Cheatham	40CH1	50	Pack Site (Prehistoric)
Cheatham	40CH97	10	Turnbull Forge
Cheatham	40CH153	5	Big Harpeth No. 5 Trestle (CW)
Cheatham	40CH154	5	Big Harpeth No. 6 Trestle (CW)
Cheatham	40CH155	5	Big Harpeth No. 7 Trestle (CW)
Cheatham	40CH157	5	Sullivan's Branch Trestle (CW)
		0	
Coffee	40CF225	8	Tullahoma Defenses (CW)
Coffee	40CF226	5	Tullahoma Defenses (CW)
Coffee	Field # CF-01	20	William Northern Bunker (WWII)
		0	
Davidson	40DV9	20	Wittenmeir Site (Prehistoric)
Davidson	40DV61	10	Confederate Earthwork (CW)
Davidson	40DV133	15	Eaton's Second Station
Davidson	40DV189	52	Part of Fort Negley (CW)
Davidson	40DV374	14	Union Earthwork (CW)
Davidson	40DV379	5	Battle Entrenchment (CW)
Davidson	40DV380	5	Battle Entrenchment (CW)
Davidson	40DV382	5	Battle Entrenchment (CW)
Davidson	40DV384	5	Redoubt No. 1 (CW)
Davidson	40DV385	8	Battle Entrenchment (CW)
Davidson	40DV388	5	Redoubt No. 4 (CW)

County	Site Number	Estimated Acreage	Name
Davidson	40DV390	5	Union Entrenchment (CW)
Davidson	40DV391	11	Battle Entrenchment (CW)
Davidson	40DV392	5	Battle Entrenchment (CW)
Davidson	40DV395	5	Big Harpeth Bridges (CW)
Davidson	40DV397	5	Big Harpeth Bridges (CW)
Davidson	40DV400	20	Johnson Site (Prehistoric)
Davidson	40DV524	20	Radio Tower Site (Prehistoric)
		0	
Dickson	40DS22	10	Cumberland Furnace (1st site)
Dickson	40DS23	20	Belleview Furnace
Dickson	40DS24	10	Jackson Furnace
Dickson	40DS25	10	Carroll Furnace
Dickson	40DS26	70	Worley Furnace
Dickson	40DS27	10	White Bluff Forge
Dickson	40DS28	20	Valley Forge
Dickson	40DS30	10	Jones Creek Forge
Dickson	40DS32	10	Upper Forge
		0	
Giles	40GL46	7	Pulaski Defenses (CW)
Giles	40GL47	8	Pulaski Defenses (CW)
Giles	40GL48	6	Pulaski Defenses (CW)
Giles	40GL49	5	Pulaski Defenses (CW)
Giles	40GL52	5	Richland Bridge (CW)
Giles	40GL53	5	Richland Bridge (CW)
Giles	40GL55	5	Union Entrenchment (CW)
Giles	40GL56	5	Union Entrenchment (CW)
		0	
Hickman	40HI3	10	Coble Pottery
Hickman	40HI120	10	Coble / Chessor Pottery
Hickman	40HI125	14	Lee and Gould Furnace
Hickman	40HI145	30	Standard Furnace
Hickman	40HI146	15	Oakland Furnace
Hickman	40HI148	10	Old Aetna Furnace
Hickman	40HI149	25	New Aetna Furnace
		0	
Lawrence	40LR12	10	Kelly forge
Lawrence	Field # LR-01	20	Prisoner of War Camp (WWII)
		0	
Lewis	40LS14	60	Napier Furnace
		0	
Lincoln		0	
		0	
Macon		0	

County	Site Number	Estimated Acreage	Name
		0	
Marshall		0	
		0	
Maury	40MU487	0	Rockdale Furnace
Maury	40MU510	5	Columbia Defenses (CW)
Maury	40MU512	5	Columbia Defenses (CW)
Maury	40MU513	5	Columbia Defenses (CW)
Maury	40MU515	5	Duck River Blockhouse (CW)
Maury	40MU516	5	Blockhouse (CW)
		0	
Montgomery	40MT371	15	Yellow Creek Furnace
Montgomery	40MT372	30	Lafayette Furnace
Montgomery	40MT373	20	Blooming Grove Furnace
Montgomery	40MT375	20	Sailor's Rest Furnace
Montgomery	40MT376	10	Poplar Spring Furnace
Montgomery	40MT377	20	Mount Vernon Furnace
Montgomery	40MT378	10	Gracey-Woodward Furnace
Montgomery	40MT379	75	Louisa Furnace
Montgomery	40MT381	15	Red River Furnace
Montgomery	40MT382	15	Washington Furnace
Montgomery	40MT383	10	Tennessee Furnace
Montgomery	40MT384	10	Montgomery Furnace
		0	
Moore		0	
		0	
Robertson	40RB81	20	Red River Bridge (CW)
Robertson	40RB142	25	Maulding's Station
		0	
Rutherford	40RD176	5	Part of Fortress Rosecrans (CW)
Rutherford	40RD177	5	Part of Stones R. Battlefield (CW)
Rutherford	40RD182	10	Hoovers Gap (CW)
Rutherford	40RD184	5	Part of Stones R. Battlefield (CW)
Rutherford	40RD185	10	Readyville Defenses (CW)
Rutherford	40RD187	5	Blockhouse No. ?(CW)
Rutherford	40RD188	5	Blockhouse No. 4 (CW)
Rutherford	40RD189	5	Blockhouse No. 6 (CW)
Rutherford	40RD190	5	Blockhouse No. ? (CW)
Rutherford	40RD194	5	Stones River Blockhouse (CW)
Rutherford	40RD230	5	Part of Fortress Rosecrans (CW)
		0	
Smith	40SM134	24	Battery Knob (CW)
Smith	Field # SM-06	10	Old Middleton Bivouac (WWII)
Smith	Field # SM-14	160	Bluff Creek Bivouac (WWII)

County	Site Number	Estimated Acreage	Name
Smith	Field # SM-16	150	Kempville Bivouac (WWII)
		0	
Sumner	40SU15	25	Rutherford-Kizer (Prehistoric)
Sumner	40SU36	10	Hall Station
Sumner	40SU38	10	Morgan Station
Sumner	40SU39	10	Saunders Station
Sumner	40SU41	10	Ziegler's Station
Sumner	40SU103	6	South Tunnel (CW)
Sumner	40SU104	6	South Tunnel (CW)
Sumner	40SU107	100	Camp Trousdale (CW)
Sumner	Field # SU-01	110	Evacuation Hospital (WWII)
		0	
Trousdale	40TR51	250	Hartsville Battlefield (CW)
Trousdale	Field # TR-01	65	Averitt's Ferry (WWII)
		0	
Williamson	40WM2	15	Old Town (Prehistoric)
Williamson	40WM10	20	Kelly Town (Prehistoric)
Williamson	40WM11	5	Gray Farm (Prehistoric)
Williamson	40WM30	10	Mayfield's Station
Williamson	40WM83	10	Harpeth Furnace
Williamson	40WM100	10	Fort Granger (CW)
Williamson	40WM101	20	Roper's Knob (CW)
Williamson	40WM102	5	Franklin Defenses (CW)
Williamson	40WM103	5	Franklin Defenses (CW)
Williamson	40WM106	250	Triune Defenses (CW)
Williamson	40WM109	20	Butler's Cantonment
Williamson	40WM342	15	Inglehame (Prehistoric)
		0	
Wilson	40WI1	30	Sellars Farm Addition (Prehistoric)
Wilson	Field # WI-11	50	Smith Farm Bivouac (WWII)
Wilson	Field # WI-15	220	Bellwood Bivouac (WWII)
Wilson	Field # WI-18	100	Vance House Bivouac (WWII)
Wilson	Field # WI-47	60	Doaks X-roads Bivouac (WWII)
Wilson	Field # WI-48	120	Cairo Bend Bivouac (WWII)
Total		**3,656**	

STREAM FISHING ACCESS – MIDDLE TENNESSEE

Locations - The aquatic projects map indicates locations where access is needed on 32 important stream fisheries (yellow asterisks and yellow-lined streams).

Description of Properties - There are two distinct types of property needed to provide fishing access: 1) boat access points for launching small boats, and 2) linear tracts in and adjacent to streams for wade fishing access.

Boat access points are needed on the Duck (2), Buffalo (1), Red (2), Harpeth (3), Elk (5), and Caney Fork (1) rivers. These areas were chosen to complement existing access areas and improve the value of recreational fisheries. All areas are located adjacent to the named river. The exact location is not critical; it is possible that another parcel located within one mile could be substituted for the indicated location. Boat access points would be relatively small parcels (up to two acres) located in the floodplain, preferably near existing roads.

Wade fishing access is needed on 27 streams. These would provide parking for a few vehicles and provide access for anglers to walk in and along the stream for 1-3 miles. Areas adjacent to bridges would be ideal locations for small parking areas.

Recreational Significance - Middle Tennessee has a long tradition of providing stream and river fisheries for smallmouth bass, rock bass, catfish, and even trout in some locations. Anglers must have the landowner's permission to wade and fish in streams. The task of contacting multiple landowners and getting permission can be overwhelming for many anglers, especially those that are not nearby residents. Establishing public corridors would greatly increase the recreational value of these fisheries. With the appropriate management, these streams can attract many more anglers and still provide high quality angling opportunities.

Most rivers in this region have some public access for boats or canoes, but there are still vast reaches of river that are not accessible. These access points are used by anglers and recreational paddlers. Some of the existing access areas are owned by outfitters that operate canoe rental and shuttle services. Additional public access areas would complement these enterprises by providing more launching options. More public access would allow anglers to avoid high-use paddling areas. Public areas would allow anglers access to fish even when the outfitters are closed on weekdays and in the off-season.

The stream corridors needed to provide wade fishing access include the stream channel and the adjacent riparian zones. Riparian and instream habitats are essential for supporting aquatic life in streams. Public ownership of these important habitats would ensure their protection and provide opportunities for enhancement.

Land Management Strategy - TWRA would establish a small, gravel parking area at all access areas, and provide a narrow gravel or concrete ramp at boat access points. TWRA

would develop access areas in a manner that would minimize the footprint on the land and maximize the amount of forested riparian vegetation.

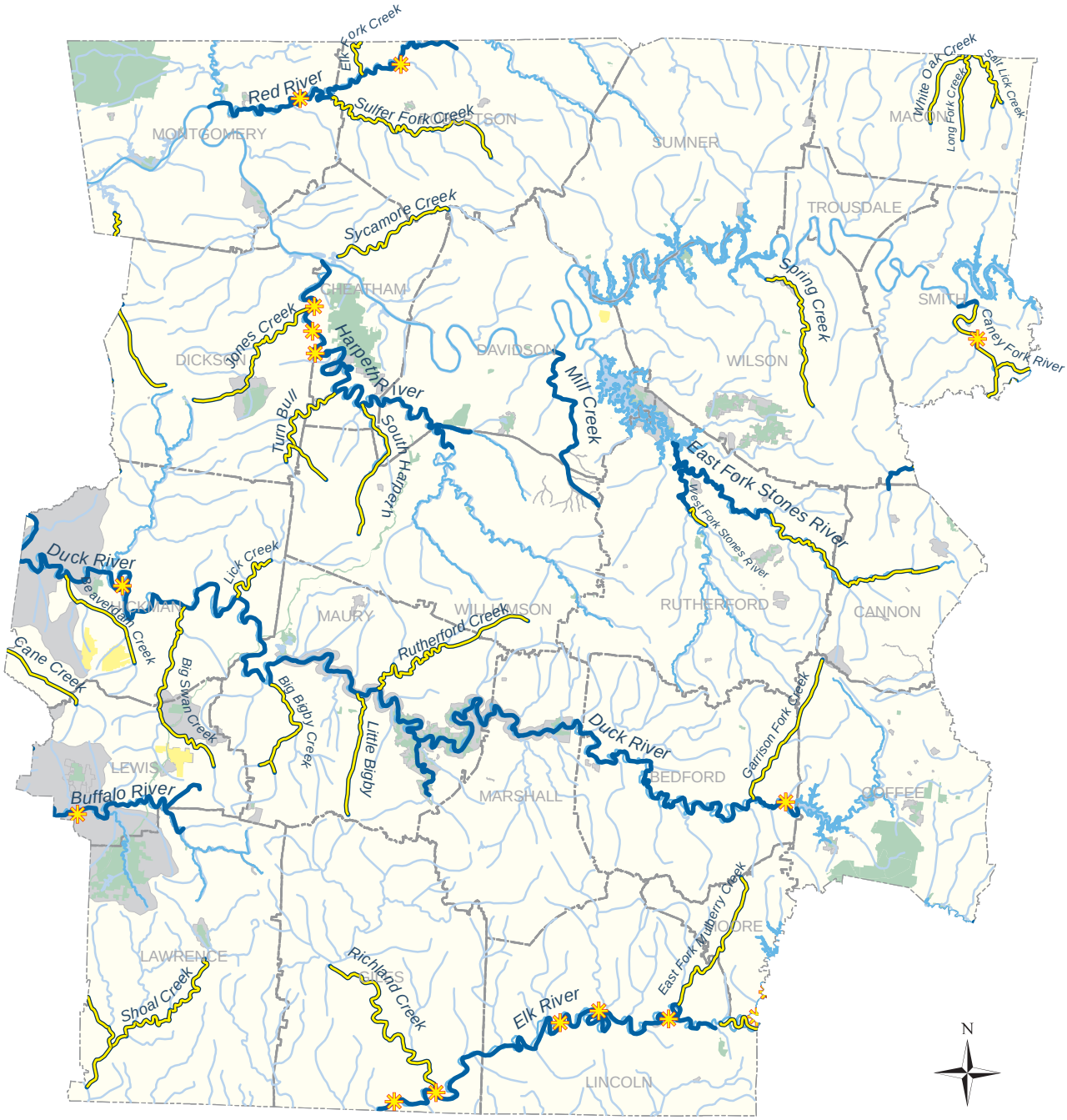
Land Protection Needs – 1,417 acres at an estimated cost of $13,609,200. See table on following page

Potential Partners - TPGF, TWRF, Trout Unlimited, Tennessee Scenic Rivers Association, local tourism boards, and local watershed organizations.

Stream Fishing Access Needed in Middle Tennessee

Watershed	Stream	County of needed access	Number of boat access needed	Miles of wade access needed	Total Acres	Cost/ Acre	Land Cost	10% Survey & Closing Fees	Total Cost
Duck	Duck River	Hickman/Bedford	2	0	6	20,000	120,000	12,000	132,000
Duck	Beaverdam Creek	Hickman	0	3	54	4,000	216,000	21,600	237,600
Duck	Big Swan Creek	Hickman/Lewis	0	5	90	4,000	360,000	36,000	396,000
Duck	Lick Creek	Hickman	0	3	54	4,000	216,000	21,600	237,600
Duck	Big Bigby Creek	Maury	0	3	54	4,000	216,000	21,600	237,600
Duck	Little Bigby Creek	Maury	0	3	54	4,000	216,000	21,600	237,600
Duck	Rutherford Creek	Maury	0	3	54	4,000	216,000	21,600	237,600
Duck	Garrison Fork	Bedford/Coffee	0	3	54	4,000	216,000	21,600	237,600
Buffalo	Buffalo River	Lewis	1	0	2	20,000	40,000	4,000	44,000
Buffalo	Cane Creek	Hickman	0	2	36	4,000	144,000	14,400	158,400
Elk	Elk River	Lincoln/Giles	5	0	10	20,000	200,000	20,000	220,000
Elk	Richland Creek	Giles	0	3	54	4,000	216,000	21,600	237,600
Elk	East Fork Mulberry Creek	Moore/Lincoln	0	3	54	4,000	216,000	21,600	237,600
Red	Red River	Montgomery/Robertson	2	0	4	15,000	60,000	6,000	66,000
Red	Elk Fork Creek	Robertson	0	1	18	4,000	72,000	7,200	79,200
Red	Sulfur Fork Creek	Robertson	0	3	54	4,000	216,000	21,600	237,600
Cumberland	Yellow Creek	Montgomery/Dickson	0	2	36	4,000	144,000	14,400	158,400
Cumberland	Sycamore Creek	Cheatham	0	3	54	4,000	216,000	21,600	237,600
Cumberland	Spring Creek	Wilson	0	3	54	15,000	810,000	81,000	891,000
Harpeth	Harpeth River	Cheatham	3	0	6	20,000	120,000	12,000	132,000
Harpeth	Jones Creek	Dickson	0	3	54	4,000	216,000	21,600	237,600
Harpeth	Turnbull Creek	Dickson/Cheatham	0	4	72	4,000	288,000	28,800	316,800
Harpeth	South Harpeth	Williamson	0	3	54	30,000	1,620,000	162,000	1,782,000
Stones	East Fork Stones River	Rutherford/Cannon	0	5	90	4,000	360,000	36,000	396,000
Stones	West Fork Stones River	Rutherford	0	2	36	4,000	144,000	14,400	158,400
Barren	White Oak Creek	Macon	0	1	18	4,000	72,000	7,200	79,200
Barren	Long Fork Creek	Macon	0	1	18	4,000	72,000	7,200	79,200
Barren	Salt Lick Creek	Macon	0	1	18	4,000	72,000	7,200	79,200
Shoal	Shoal Creek	Lawrence	0	5	90	4,000	360,000	36,000	396,000
Shoal	Factory Creek	Lawrence	0	2	36	4,000	144,000	14,400	158,400
Caney Fork	Caney Fork River (Trout Section)	Smith	1	5	93	50,000	4,650,000	465,000	5,115,000
Caney Fork	Smith Fork Creek	Smith/Wilson	0	2	36	4,000	144,000	14,400	158,400
		TOTAL	**14**	**77**	**1417**		**$12,372,000**	**$1,237,200**	**$13,609,200**

Stream Fishing Access Project for the Middle Tennessee Region



- Need Access Point
- Need Access to Wade Stream
- Important Stream Fishery
- Areas of Interest
- Public Lands
- Other Protected Lands
- Major Rivers and Reservoirs
- Middle Tennessee Counties

Generated by the TWRA GIS Lab, March 2006 (jj)

BARNETT'S WOODS SNA

Location – (N36.5193, W86.5601) Barnett's Woods is located in Montgomery County approximately 16 miles west of Clarksville on Cooper Creek Road. (See Cumberland River (Haynes Bottom/Shelton Ferry) map)

Description - Barnett's Wood's is a high quality species rich second growth forest that was last cut in the 1950's. The invasive exotic Japanese honeysuckle, which occurs here, poses a serious threat to native vegetation including the Price's potato bean. Illegal off-road-vehicle use and artifact digging also poses a threat to the natural area.

Significance – Site Importance High (B3) – Barnett's Woods is a 40-acre SNA located on the Western Highland Rim. TNC acquired the area in 1981 and transferred it to the State in 2004. It is most significant because it supports a population of the federally listed Price's potato bean (*Apios priceana*) and because federally endangered Indiana bats (*Myotis sodalis*) have also been known to use Foster Cave (Barnett's Cave) as a temporary roost while moving from breeding to hibernation. Barnett's Woods is also noteworthy because it is floristically diverse for its size with 443 vascular plant species present representing 95 plant families. It is a favorite place for Austin Peay State University students and faculty to botanize because of its floristic significance and close proximity to Clarksville.

While sinks and caves are known for this area, Foster Cave is the most important cave at Barnett's Woods. It has a large east-facing opening at the base of a 100-foot bluff. Cooper Creek enters the SNA near a second large cave on the property. The creek's many tributaries have dissected the landscape creating rich hollows and slopes resulting in a variety of slope aspects. The many different site conditions associated with the alluvial woodland created by the creek and its tributaries, the rock outcropping and steep vertical slopes create habitat for a rich flora.

A mesic (moist, rich) forest community found here is noteworthy. It is comprised of sugar maple, beech, white ash, tulip poplar, shagbark hickory, pignut hickory, mockernut hickory, black cherry, sycamore, slippery elm, and many oak species. Kentucky coffee-tree (*Gymnocladus dioicus*), which is uncommon in Tennessee, also grows in this forest community. This rich condition is also why sixteen species of ferns and fern allies occur here. Other plants of interest reported from Barnett's Woods include lesser ladies tress (*Spiranthes ovalis*), Indian-pipe (*Monotropa uniflora*), and butternut (*Juglans cinerea*). The butternut tree, sometimes-called white walnut, is in serious decline throughout its range because of the butternut canker that is caused by an exotic fungus.

Rare elements include: *Apios priceana* (state status: endangered, federal status: listed threatened), *Panax quinquefolius*, *Lilium michiganensis*, *Hydrastis canadensis*, *Pseudanophthalmus colemanensis, Orconectes pellucidus, Myotis sodalis*, and *Sorex longirostris*.

Strategy – The strategy for acquisition at Barnett's Woods is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 217 acres at an estimated cost of $350,000.

Potential Partners – TDEC, and USFWS.

BASIN SPRING SNA

Location - (N35.9557, W86.0366) The approximately 218-acre site is located in Williamson County in the Fernvale community near Bedford Creek.

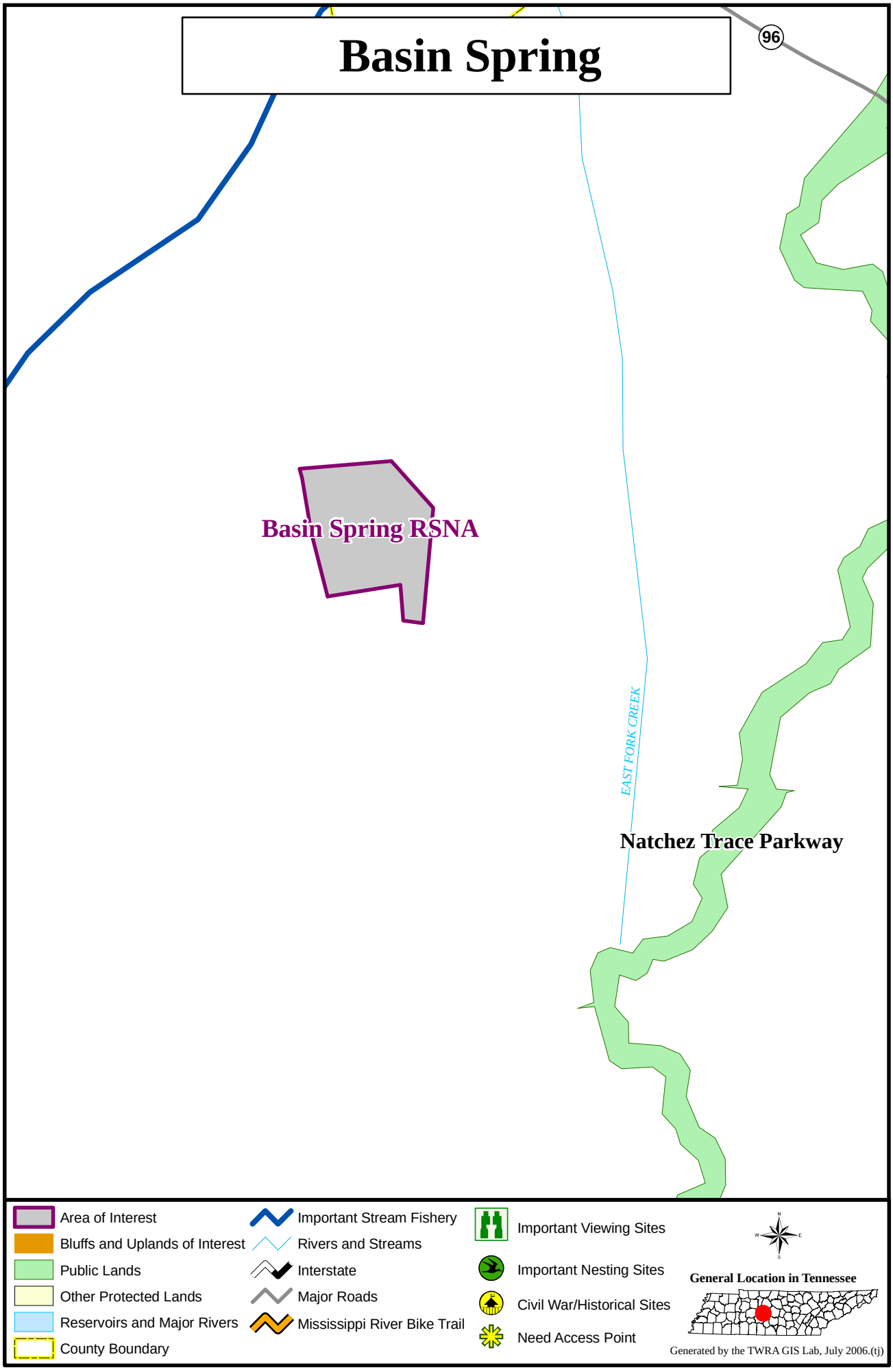
Description - Basin Spring is a 200+ acre forested tract which has been owned by the Goodpasture family for about 35 years. During that time no timber has been harvested from the land, which has been passively managed as a family nature preserve. Historically the local post office was located here, but it has been years since the post office has operated or anyone has resided on the property.

Significance – Site Importance High (B3) - The major portion of the area supports a maturing second growth mesic oak woods with a diversity of herbaceous plants which indicates a lack of disturbance. However, along an exposed roadside at the base of a small slope is a relatively small population of federally endangered Price's potato bean (*Apios priceana*). Dr. Katherine Goodpature monitored these plants until her death and counted 6-10 individuals in 1983. Price's potato bean is listed as endangered in Tennessee and currently has one protected occurrence at Barnett's Wood SNA. The sharp-shinned hawk (*Accipiter striatus*); deemed in-need-of-management has also been seen on the site.

Strategy - The strategy for acquisition at Basin Spring is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Preservation of these rare species will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 218 acres at an estimated cost of $352,000.

Potential Partners – USFWS and TDEC


Basin Spring
96
Basin Spring RSNA
EAST FORK CREEK
Natchez Trace Parkway
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
Need Access Point
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

BILLY SWAMP

Location – (N35.6125, W85.9615) Billy Swamp is located in Coffee County near the Coffee/Warren County line just northeast of Shady Grove. (See Parks Creek Swamp & Highway 53 Roadside Barrens map)

Description – This site is approximately 120 acres and is located on the Eastern Highland Rim. The site contains a depressional wetland with standing water and much of the site is forested with willow oak, sweetgum, red maple and white oak. A portion of the site contains an open shallow pond. The northeastern portion is a grassland system kept in an early successional state by annual mowing. Although mowed, this area provides habitat for grassland and forb species which are indicative of the barrens region of the Eastern Highland Rim. In the grassland portion of the site, plant species such as southern bog club moss (*Lycopodiella adpressum*), camphor weed (*Pluchea camphorate*), royal fern (*Osmunda regalis*), needle spike rush (*Eleocharis acicularis*), and narrowleaf primrose willow (*Ludwigia linearis*) have been documented.

Significance – Site Importance Moderate (B4) - Billy Swamp contains two state-listed plant species: wide-leaved yellow-eyed grass (*Xyris laxifolia* var. *iridifolia*) and Barrett's sedge (*Carex barrattii*). Both plants are obligate wetland species. Wide- leaved yellow-eyed grass is threatened and is considered very rare and imperiled (S2) in Tennessee. The Tennessee Division of Natural Areas knows of only ten extant occurrences of this species in the state. At Billy Swamp, wide-leaved yellow-eyed grass grows in a low wet portion of the grassland area while Barrett's sedge is located in the forested wetland. Barrett's sedge is endangered and is considered very rare and imperiled (S2) in Tennessee. There are only thirteen extant occurrences known from two counties in Tennessee. These rare species were documented during a few visits to the site and additional inventory would likely yield more rare species and/or extend the range of the currently known rare species.

Strategy – Both the forested and grassland sites are wetlands and TWRA wetland acquisition funds could be applied. The site is a grassland in parts and the NRCS grassland reserve program may be a potential source of funding.

Land Protection Needs - 88.3 acres at an estimated cost of $165,000.

Potential Partners – TWRA, NRCS, TNC, TDEC.

BLEDSOE CREEK STATE PARK

Location – (N36.3843, W86.3560) Bledsoe Creek State Park is located on Ziegler's Fort Road off of Hwy 25, near Gallatin in Sumner County on the shores of Old Hickory Lake.

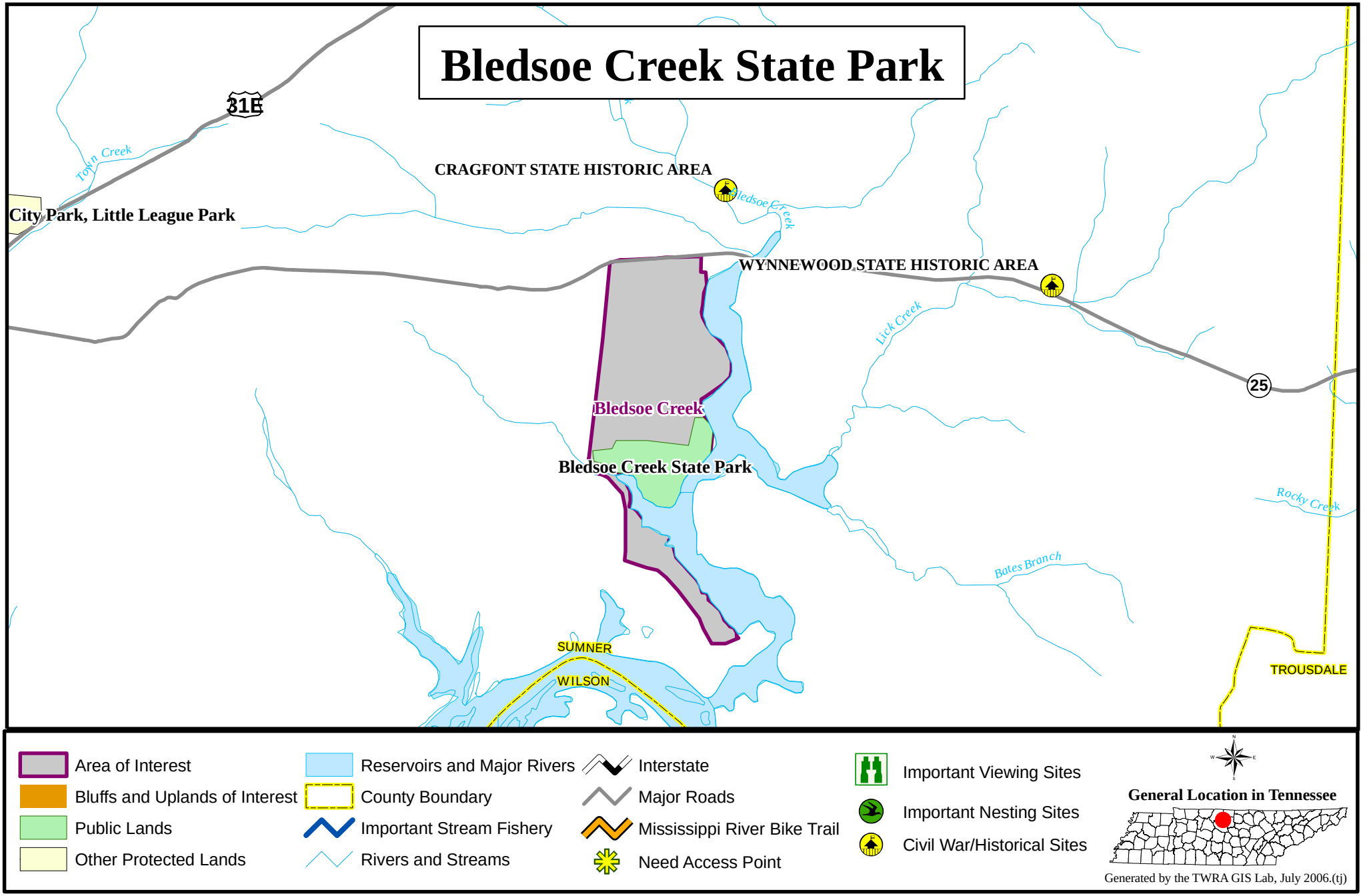
Description - Bledsoe Creek State Park is surrounded on three sides by Old Hickory Lake and forest cover. It consists of 164 acres and has a campground, boat ramp, fishing, picnicking and hiking.

Significance - This 164 acre park offers campers and day-use visitors an opportunity to observe an abundance of songbirds, waterfowl, mammals, reptiles and amphibians. The surrounding community is rich with history. The park was named for settler Isaac Bledsoe, who built a frontier fort close to he site in 1779. Bledsoe's Lick provided water and attracted game for Native Americans at Castallian Springs, a large prehistoric Mississippian village, and white settlers, who hunted abundant buffalo.

Strategy - The strategy for future acquisitions for Bledsoe Creek State Park is to acquire properties surrounding the park that enhance the wildlife, aesthetics, interpretive and recreation mission of the park.

Land Protection Needs – 381 acres at an estimated cost of $1,375,000

Potential Partners: TCF and other land conservancy groups


Bledsoe Creek State Park
31E
Town Creek
CRAGFONT STATE HISTORIC AREA
Bledsoe Creek
City Park, Little League Park
WYNNEWOOD STATE HISTORIC AREA
Lick Creek
25
Bledsoe Creek
Bledsoe Creek State Park
Rocky Creek
Bates Branch
SUMNER
WILSON
TROUSDALE
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

BLOWHOLE CAVE

Location – (N35.9119, W86.0621) Blowhole Cave is located in Cannon County. The entrance is approximately 2.8 miles southeast of Auburntown on the east side of Hurricane Creek. (See Short Mountain Designated SNA & Short Mountain Sanctuary RSNA map)

Description – Blowhole Cave is comprised of an extensive karst system that has never been fully documented, although approximately 5 miles have been mapped or explored (Tennessee Cave Survey, 2003). This is a highly aquatic system with four known major streams and more than 100 minor inflows. The four streams merge into one main stream that flows from the cave's mouth. Originally the cave could be accessed only through the spring resurgence of the stream channel. In 1958, a man-made opening was dug just north of the stream outflow. Both this and the aquatic entrance were sealed in the late 1980's and replaced with another man-made opening just above and to the south of the stream mouth. This was accomplished by the current owner and a caver who had explored the site for many years. Apparently no significant geologic features were directly impacted by this action. This entrance is gated by a solid iron door and has never been breached. The original man-made entrance has been breached only once (1992), though allegedly little damage to the cave's geologic features occurred.

The explored portion of the cave includes four distinct levels, with canyons, stream passages, dry upper levels, waterfalls, dome pits (vertical shafts), and rooms to 80' high and 100' wide. Claw marks from bears and fragile bear vertebrae are reported by the caretaker (cave steward). A large variety and number of formations and minerals are present, including stalactites, stalagmites, flowstone, draperies, soda straws, cave pearls, helictites, a rare white helictite ("hodtite"), dogtooth spar, gypsum hair and crystals, moon milk, and columns. The "hodtite" helictite is unique to this site. According to the steward, the site contains the largest concentration of varied formations of any cave he has visited. Legal access to the cave is accomplished only with the steward's cooperation, so the number of persons utilizing this system has been limited.

Properties surrounding the entrance were formerly used for agriculture and pasture when the property was occupied. The highly sloped portions of these lands currently contain a mixed hardwood forest.

Significance – Site Importance Moderate (B4) – The known fauna of Blowhole Cave is limited to a few relatively common species as observed by Heritage personnel in 1993. Apparently the cave has never supported large numbers of bats, as evidenced by the lack of guano. The steward reports seeing a species of cave cricket *(Ceuthophilus* sp.) deep into the cave, an important observation since cave biodiversity often directly is linked to the presence and abundance of cave crickets. The eastern woodrat (*Neotoma magister*), a species deemed in-need-of-management, was confirmed from the site in 2001. This species also is key to nutrient flow in Tennessee cave systems. Recent surveys of other wet caves in Tennessee have documented numerous G1 or G2 species, including many new to science.

Strategy – The site needs to be examined further by personnel qualified to assess the aesthetic value of the formations within, and requires a more thorough inventory particularly of its invertebrate community. All lands within the recharge area of the cave need to be acquired and protected in order to prevent potential agricultural runoff from entering the system. Closure of the 1958 man-made entrance needs to be evaluated and possibly repaired or reinforced. Airflow around the more recent man-made entrance needs to be evaluated and reduced to the maximum extent practical.

Land Protection Needs – 410 acres at an estimated cost of $665,000

The current owner of the entrance and surrounding 77 acres also owns 123 acres of cave and mineral rights on adjacent properties. This nonresident owner has for several years intended to commercialize the cave to permit large-scale viewing of its formations. Though this has never materialized, modification of the cave for this purpose could have marked negative and irreversible impacts on its geologic and biologic diversity.

Potential Partners – TNC, TWRA, SCCi (Southeastern Cave Conservancy, Inc.), TDEC

BON AQUA FOREST

Location - (N35.9456, W86.3169) The approximately 38-acre site is located in Hickman County approximately 0.75 miles south of the Bon Aqua community on Hwy 46 .

Description - Located on the Western Highland Rim, the site contains a stand of purported "virgin timber". More than likely the timber was cut many decades ago but the mature hardwood forest is well established.

Significance – Site Importance Moderate (B4) – A qualitative assessment indicated a large portion of the 30-acre site is dominated by white oak. Most of the overstory trees were over 24 inches dbh with many near 36 inches. Many are well-spaced trees and these are not "open" grown, but had tall straight trunks. Other oaks include *Quercus rubra*, *Q. velutina*, *Q. falcata*, and *Q. shumardii*, but in much smaller numbers, and their sizes are also impressive with many individual trees over 25 inches dbh and one *Q. velutina* at 34 inches . Tulip poplar is also present, but not a dominant or even co-dominant level. The few tulip poplar trees present are just as large as the oaks. Various hickories including *Carya glabra* and *C. alba* occur here as do large persimmon trees. Some of the hickories are nearly 20 inches dbh with one *Carya glabra* at 30 inches.

Sugar maple and beech (to a much less extent) occur as saplings or sub-canopy, but in low numbers. This seems uncommon for many oak forests have a dominance of these two species. The sapling and tall shrub layer contains the various canopy trees represented as well as good deal of spicebush, dogwood, *Ostrya virginiana*, paw paw, *Ilex decidua*, sourwood, etc. Umbrella magnolia is a dominant understory species in the stands dominated exclusively by white oak.

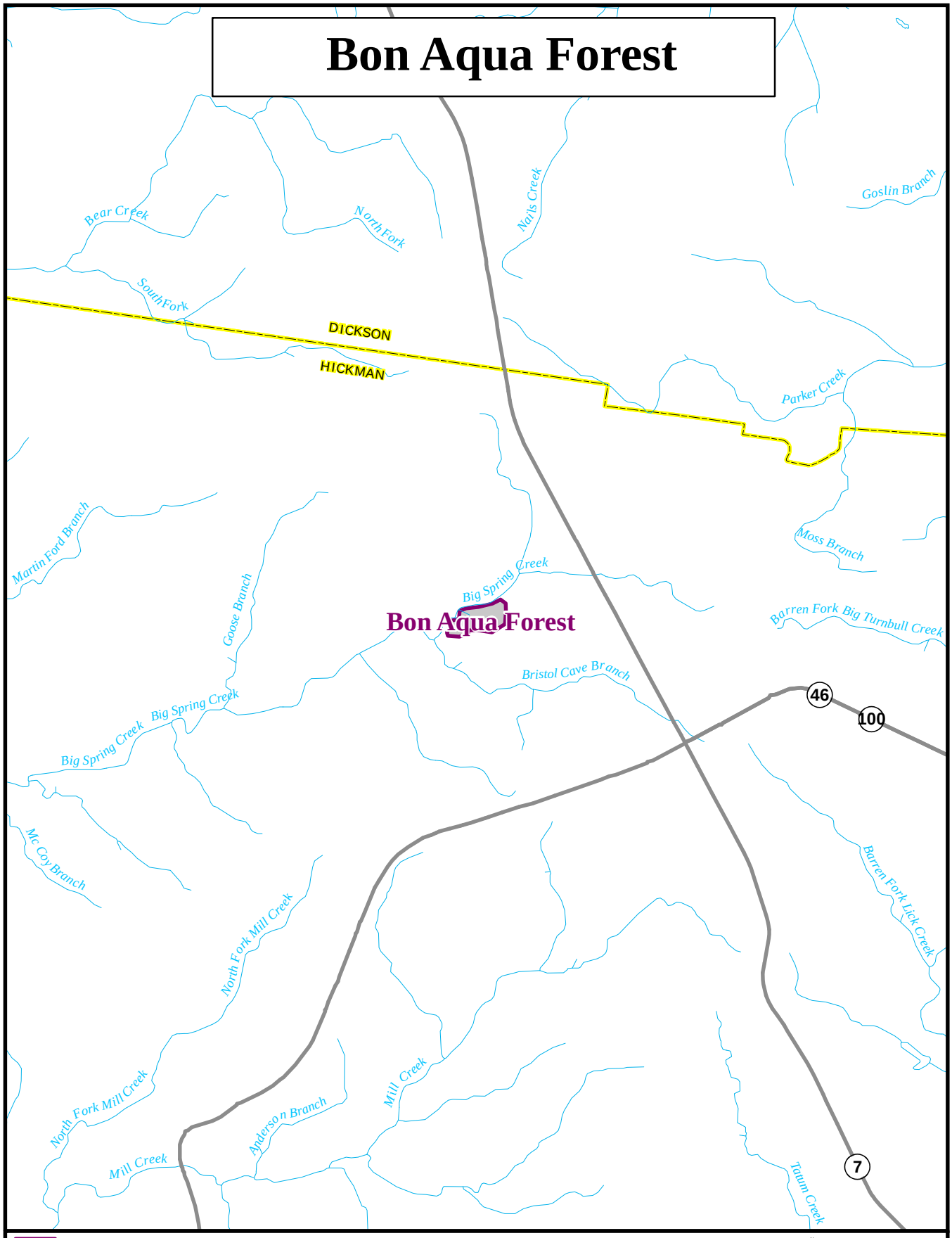
The herb layer contains much poison ivy, and the common ferns, as well as *Chimaphila maculata*, and a somewhat large amount of *Desmodium nudiflorum*. *Panax quinquefolius* is the only rare species found on the site (state status: special concern, commercially exploited).

Strategy - The strategy for acquisition at Bon Aqua Forest is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation rare species and representative communities. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 50 acres at an estimated cost of $220,000

Potential Partners – TDEC

Bon Aqua Forest

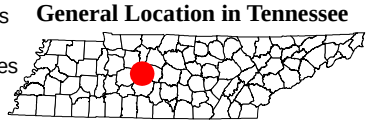


Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary

Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail

Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
Need Access Point

General Location in Tennessee



Generated by the TWRA GIS Lab, July 2006.(tj)

BRAWLEYS FORK

Location - (35.6934, W86.1717) Brawleys Fork is located on the Eastern Highland Rim in southwestern Cannon County near the community of Bradyville.

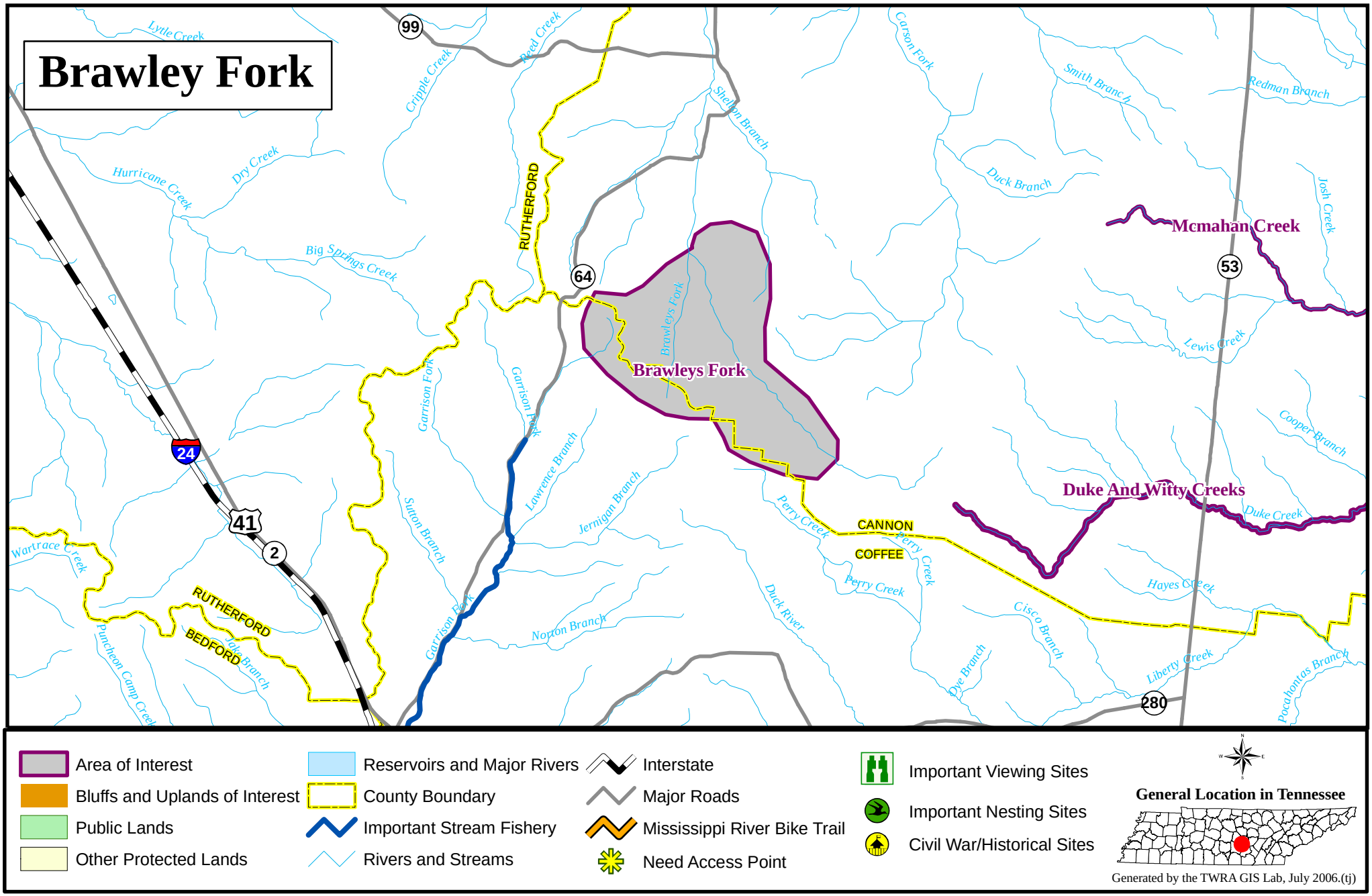
Description of Properties - These properties are located in a cove along Brawley's Fork on the Eastern Highland Rim. They total 934 acres of mostly dry to mesic oak forests.

Significance - The endemic *Cambarus williami* (Brawley's Fork crayfish) occurs in this spring fed stream. The species was first collected at Brawley's Fork in 1971. It wasn't until 1995 that this species was described as new to science. Until 2000, *C. williami* was only known from the type locality of Brawley's Fork, but surveys conducted by DNA biologists have extended the known range of the species. In 2001, the species was listed as state endangered and it is currently considered very rare and imperiled (G2). Even with additional surveys *C. williami* is not known to occur outside of the headwaters of the Stones River watershed and is limited to only two hydrologic units (East Fork Stones River and Brawley's Fork). To date, it does not occur on protected land. The primary threat to this crayfish is sedimentation, therefore protection of the above area should be a high conservation priority.

Many other species of greatest conservation need also occur in this area. They include Chuck-wills-widow, yellow-billed cuckoo, sharp-shinned hawk, eastern wood peewee, orchard oriole, yellow-throated vireo, wood thrush, wood rat and the endangered gray bat.

Land Protection Needs - 934 acres at an estimated cost of $1,330,000.

Potential Partners – TDEC and TWRA.


Brawley Fork
Lytle Creek
Cripple Creek
Reed Creek
Carson Fork
Smith Branch
Redman Branch
Shelton Branch
Hurricane Creek
Dry Creek
Duck Branch
Josh Creek
Big Springs Creek
RUTHERFORD
64
Mcmahan Creek
53
Brawleys Fork
Brawleys Fork
Lewis Creek
Garrison Fork
Garrison Fork
Cooper Branch
24
Lawrence Branch
Duke And Witty Creeks
Sutton Branch
Jernigan Branch
Perry Creek
Duke Creek
41
CANNON
COFFEE
Wartrace Creek
2
Perry Creek
Perry Creek
Hayes Creek
RUTHERFORD
BEDFORD
Garrison Fork
Norton Branch
Duck River
Cisco Branch
Puncheon Camp Creek
Jake Branch
Dye Branch
Liberty Creek
Pocahontas Branch
280
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

BRIDGEWATER CAVE

Location – (N36.1912, W85.9749) Bridgewater Cave is located in Smith County approximately 1.2 miles north of Monoville, west of Hwy. 80, at an elevation of 660 feet." (Barr, 1961).

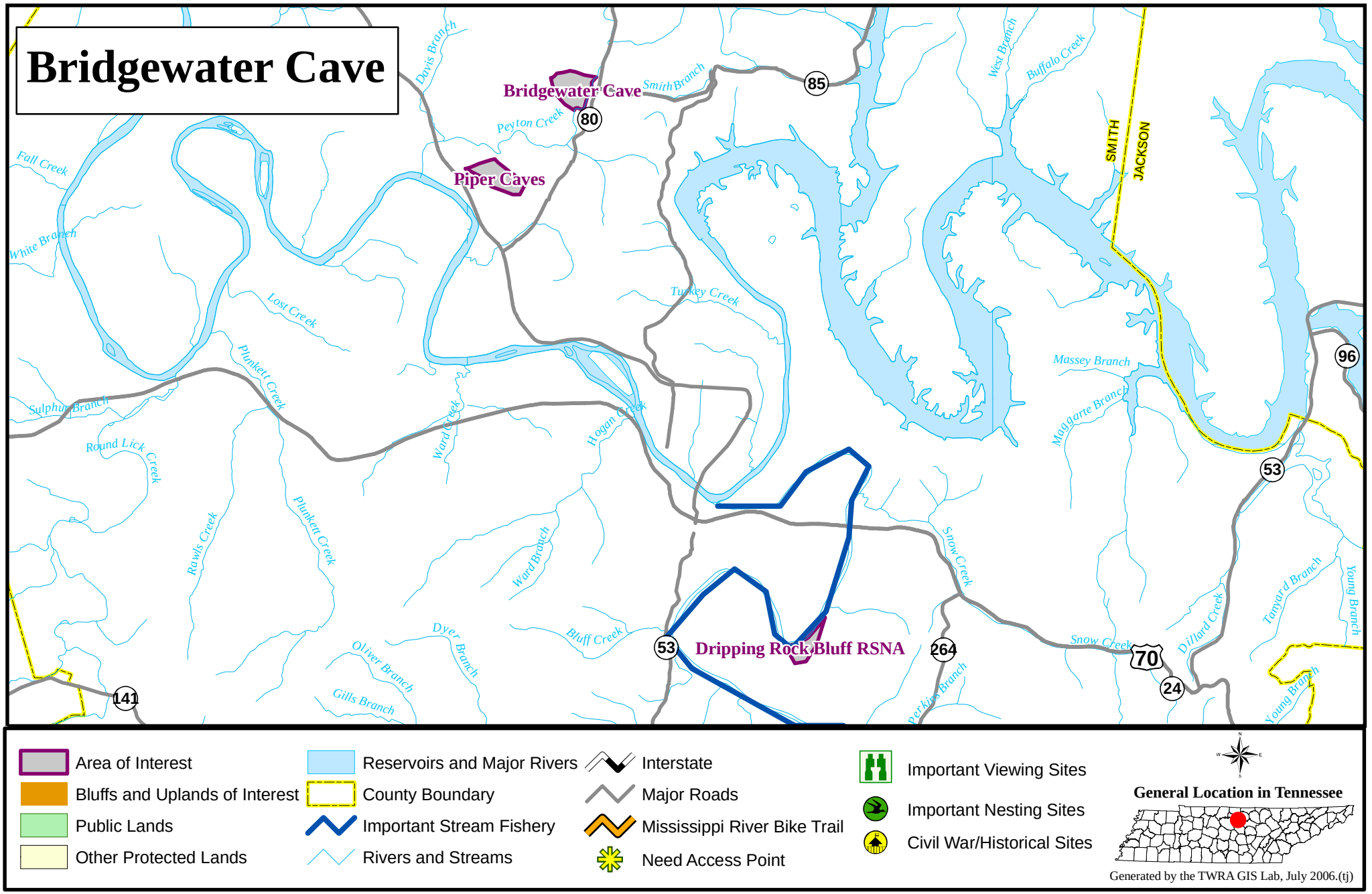
Description – This cave occurs in Bigby-Cannon limestone. According to Barr (1961): "The main entrance to the cave lies 275 yards west-southwest of the old Bridgewater house in a dense cedar thicket. Many evidences of saltpeter mining are to be seen in the cave, although the leaching vats probably were located outside. The cave has two entrances. The main entrance is a hole 5 feet by 4 feet, which extends downward for about 25 feet into a gallery 20 feet wide and 10 feet high. This gallery extends N. 70^{o} W. for 135 feet and forks. The left fork is a wide crawl which runs S. 10^{o} E. for 90 feet, and the right fork runs S. 50^{o} W. for 135 feet. A trench has been dug at the opening to this fork, and pick marks may be seen in the damp fill beneath some of the large breakdown slabs. The heads of the picks, presumably belonging to the saltpeter miners, were about 2 inches wide and 12 inches long. Both branches of this part of the cave end in breakdown. At 60 feet a side passage leads northward, down into a lower level of the cave. In this section are three large rooms-each about 25 feet wide, 40 feet long, and 30 feet high-a 20-foot drop negotiable by climbing down on ledges, and a long canyon 8 feet wide and 60 to 70 feet high. Part of the lower level extends beneath the upper cave. Many pieces of wood used for ladders and bridges by the miners are in this level, and a dug trench has made a crawlway leading into the high canyon readily accessible. This part of the cave trends north-northeast for 750 feet and finally emerges at the second entrance-a pitlike hole 10 feet in diameter and 30 feet deep-on the hillside a short distance north and west of the main entrance. The second entrance has nearly been blocked by breakdown, and it is necessary to crawl beneath a huge mass of broken rocks to enter the cave by this route." The total length of mapped passages is 1500 feet (Tennessee Cave Survey, 2003).

Significance – Site Importance High (B3) – Bridgewater Cave is home to a large maternity roost of state and federally endangered gray bats (*Myotis grisescens*). This species is considered vulnerable and imperiled (G3S2). A population of 12,410 gray bats was reported at this location in the summer of 2002 (Harvey, 2002).

Strategy – The primary concern for the conservation of the gray bat is uncontrolled access. Disturbance of gray bats during roosting periods can significantly reduce colony size, and ultimately drive them away. In addition to protecting an initial one-acre around each entrance of the cave, the cave may need to be posted to discourage inappropriate access. Other exclusion measures may be necessary. Acquisition of additional acreage will provide for establishment and maintenance of a forested corridor from the entrances to Peyton Creek.

Land Protection Needs – 130 acres at an estimated cost of $142,000.

Potential Partners - TNC, TWRA, USFWS, TDEC.


Bridgewater Cave
Bridgewater Cave
Piper Caves
Dripping Rock Bluff RSNA
Davis Branch
Smith Branch
Peyton Creek
Fall Creek
White Branch
Lost Creek
Plunkett Creek
Sulphur Branch
Round Lick Creek
Rawls Creek
Ward Creek
Hogan Creek
Turkey Creek
Ward Branch
Bluff Creek
Dyer Branch
Oliver Branch
Gills Branch
West Branch
Buffalo Creek
SMITH
JACKSON
Massey Branch
Maggarte Branch
Snow Creek
Dillard Creek
Tanyard Branch
Young Branch
Perkins Branch
85
80
53
264
70
24
96
141
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

BRIGGS CHAPEL HOLLOW

Location – (35.8277, W87.5609) Briggs Chapel Hollow site is located in Hickman County at the confluence of Piney River and Duck River northwest of Centerville on Briggs Chapel Road. (See Southwestern Highland Rim Project map)

Description – The site encompasses approximately 10 acres along Briggs Chapel Road and is adjacent to the floodplain and bank of Piney River. The bluff/slope is steep to moderate and has blocky limestone outcrops with large trees and a well developed understory. The forest is mesic with dominant trees of white oak, beech and white ash. Springs are prevalent along the slope. The low adjacent floodplain area is very mesic and appears to be undisturbed. Price's potato bean (*Apios pricean*) plants are located on the slope and at the top of the bluff on the west side of the road, and a few plants are located on the floodplain (east) side of the road. The only apparent disturbance to the site is grading of the roadway which is probably done at least annually.

Significance – Site Significance is High to Very High (B2/B3) – *A. priceana* is a federally endangered plant and is globally rare and imperiled (G2). In 2004, the Briggs Chapel Hollow site was surveyed and about 24 vines, with at least twelve in flower/fruit of moderate vigor, were observed along a 10-15 m stretch of the road. Threats to this population include road maintenance, mowing, bush-hogging, herbicide application, and logging. There is also a population along the bluff line of *Elymus svensonii* (Svenson's wild rye), a state endangered species considered globally rare (G3).

Strategy - The first strategy would be to survey and delineate the extent of the population at this site. Suitable habitat for *A. priceana* exists throughout the Piney River valley. The site is owned, or was previously owned, by a timber company. Property should be acquired within and adjacent to the site boundary to ensure watershed protection, and preservation of rare species and representative plant communities.

Land Protection Needs – 10 acres at an estimated cost of $10,000.

Potential Partners – TDEC and TNC

BUFFALO STATE SCENIC RIVER AND CORRIDOR

Location – (N35.3933, W87.3657) The Buffalo River watershed includes parts of Hickman, Humphreys, Lawrence, Lewis, Perry and Wayne Counties, draining 1,823 square miles of the Interior Low Plateau Physiographic Province before emptying into the Duck River. Its entire watershed is in southern middle Tennessee, flowing into the Duck River just upstream of its confluence with the Tennessee River.

Description - The Buffalo River travels some 110 miles as it gently makes its way through rural middle Tennessee. It travels through a variety of landscapes, often pastoral through rural and agricultural lands, and at times between limestone bluffs more than 30 feet high.

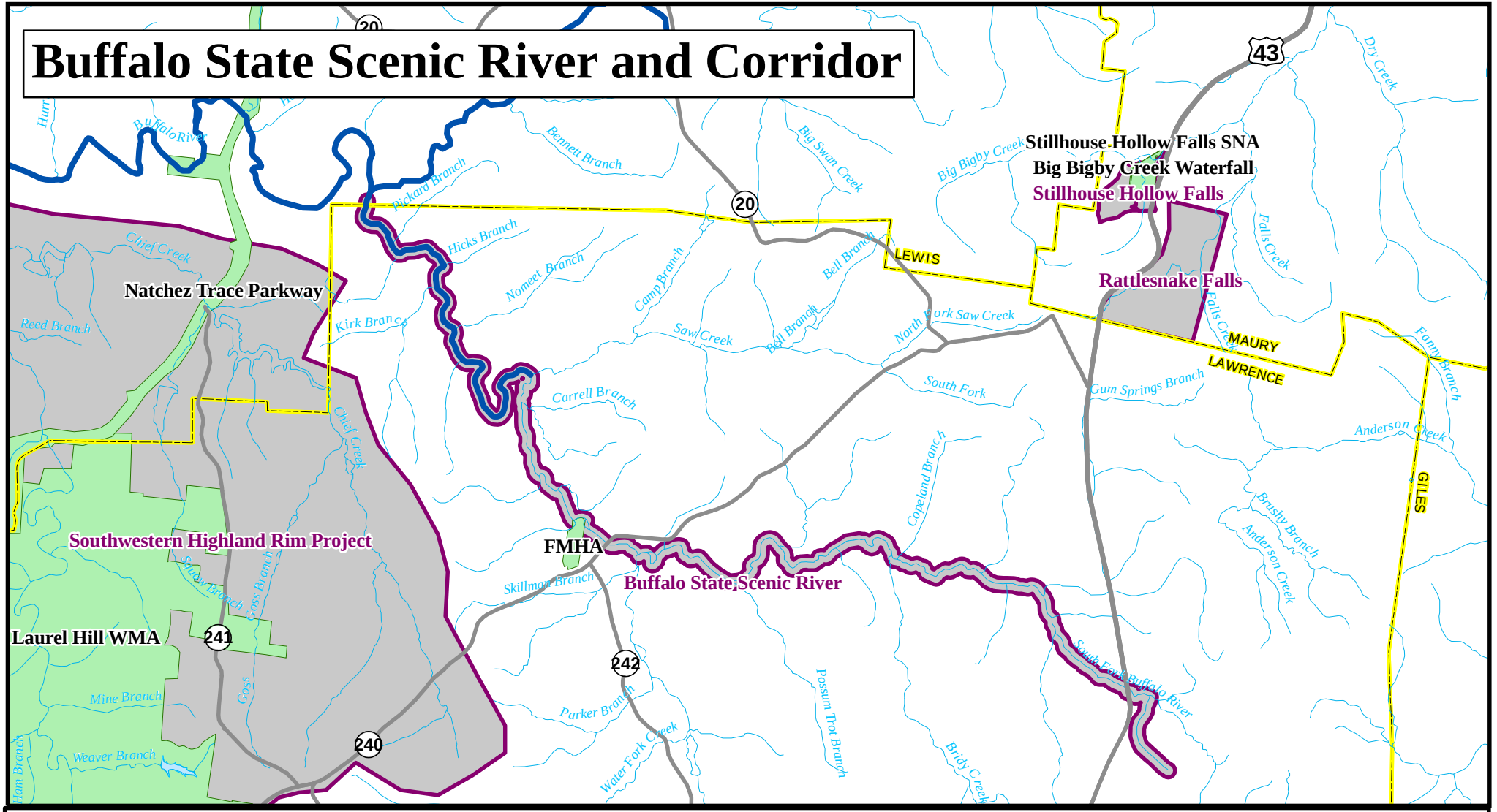
Significance - The Buffalo River is one of Tennessee's most biologically diverse and significant rivers, with at least 11 rare species of fish and mussels including at least four with a federal status. It is the longest unimpounded river in middle Tennessee, flowing through the southern and western portions of that region before emptying into the Duck River near its confluence with the Tennessee River. It is the largest tributary of the Duck River and is a major stream for canoeing and fishing. Many river outfitters servicing the river attest to its value as a recreational canoeing resource in middle Tennessee. Recreational fishing and hunting are also popular activities. A part of the Buffalo River is listed as a State Scenic River because of its pastoral qualities. Approximately 18 miles of the Buffalo River in its uppermost section in Lawrence County is designated as a Class II Pastoral River.

Strategy - The site conservation plan for the Buffalo State Scenic River follows the guidelines of the State Scenic River Act and identifies a corridor of no more than 450 feet from the usual banks on either side of the river. Additionally, connecting contiguous protected areas to state and other publicly owned lands along the entire river corridor are a major approach toward protecting the Buffalo River and making it a scenic greenway. Methods for conserving these areas are by fee title purchases, conservation easements, landowner assistance programs, and conservation buyers. Public and private partnerships are key to protecting and maintaining this relatively unspoiled river. Public ownership of the entire river corridor is not practical; rather public ownership of key access points will be targeted.

Land Protection Needs – 500 acres at an estimated cost of $545,000.

Potential Partners - TDEC, TWRA, TNC, USFWS, USACE, county governments, private corporations, foundations, and individual donors.

Buffalo State Scenic River and Corridor



Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites

General Location in Tennessee

Generated by the TWRA GIS Lab, July 2006.(tj)

BURNT HILL ROAD GLADE

Location – (N35.5607, W86.6225) Burnt Hill Road Glade is located in Bedford County between Burnt Mill Road and the Duck River. The site is located about 3 miles west of Halls Mill, a community about 5 miles south of Unionville. (See Duck River Habitat Corridor and State Scenic River map)

Description – The site encompasses approximately 200 acres between Burnt Hill road and a bend in the Duck River. The area includes seasonally wet limestone gravel glades, old fields in various stages of succession, several scattered barrens areas and a river bluff. The rare plants are restricted to the open and forested limestone glades. Soils are very heavy clay and are deeper, around 25 cm, than those in adjacent glades. Seasonal flooding is likely very important to this community and the leafy prairie clover. The running glade clover is located in a mossy cedar/hardwood forest just upslope of the above-mentioned drainage that flows into the River.

Osborne Cave, or Critter Cave, is formed in a sinkhole on the NE corner of Burnt Hill Road Glade, the most obvious feature of a NW-SE oriented strike containing numerous sinks and depressions.

Significance – Site Significance Very High (B2) – This site has one federally listed plant species, *Dalea foliosa* (leafy prairie clover), and three state listed plant species, *Schoenolirion croceum* (Yellow sunnybells), *Polygala boykinii* (milkwort) and *Trifolium calcaricum* (running glade clover). *T. calcaricum* is a very rare plant recently discovered in Middle Tennessee at a few sites. It is globally ranked as G1 and there are no sites protected in Tennessee for this species. Only one other population exists in Virginia.

This wet area has been determined to be a globally rare plant community type, a "wet calcareous meadow." Species include *Schoenolirion croceum*, *Eleocharis compressa*, *Nothoscordum bivalve*, *Carex craweii*, *Scirpus cyperinus* and *Dalea foliosa* (at this site).

In the fall of 1993, a small population of gray bats (*Myotis grisescens*), listed federally endangered, was reported in the Osborne Cave by TNC staff. Although unconfirmed, this population probably uses this site as a transition cave between summer and winter roosts. The proximity of Osborne Cave to the Duck River provides access to a natural dispersal corridor and feeding grounds. At this time only 74 feet of mapped passage is known. Access to the cave needs to be limited until the exact nature of this colony is determined.

Strategy - The first strategy would be to contact the current landowners and survey and delineate the populations of *Dalea* and *Trifolium*. There was significant disturbance observed at the site in 2000 when it was last visited. Off-road vehicle traffic and wildlife food plots had been established, along with some clearing of the glades and forest. Lespedeza, an invasive exotic, was abundant in the area of the *Dalea foliosa*. Long-term protection of this site will ensure that these threats are addressed.

The strategy for acquisition is to acquire properties within and adjacent to the site boundary for access and access control, watershed protection, and preservation of rare species and the rare plant community.

Land Protection Needs – 200 acres at an estimated cost of $325,000.

Potential Partners – TDEC, TNC, and possibly TWRA.

CANEY FORK RIVER BLUFFS

Location – (N36.1417, W85.8117) Caney Fork River Bluffs is located in Putnam and Smith Counties approximately 0.75 mile west of the Buffalo Valley (Hwy. 96) interchange along the I-40 corridor. The bluffs of interest on Moss Bend begin just east of the bridge over the Caney Fork River and along the opposite bank from the rest area and continue westward approximately 1.0 mile to the next bridge crossing over the Caney Fork River.

Description – The site is located on the Eastern Highland Rim Physiographic Province of the Interior Low Plateau. The site contains a thin layer of soil on dolomitic limestone ledges and in crevices of high bluffs above the Caney Fork River that support a number of state rare plants. The limestone cap on the bluffs has eroded forming a system of jumbled large boulders, irregularly blocky crests and ledges. The trees on the 100 ft. high bluffs form a low, open, dry woodland of red cedar, Shumard oak, chinquapin oak, and elm. The understory is comprised of a dense growth of shrubs such as redbud and rusty black haw, Carolina buckthorn, aromatic sumac, St. John's wort, and coralberry.

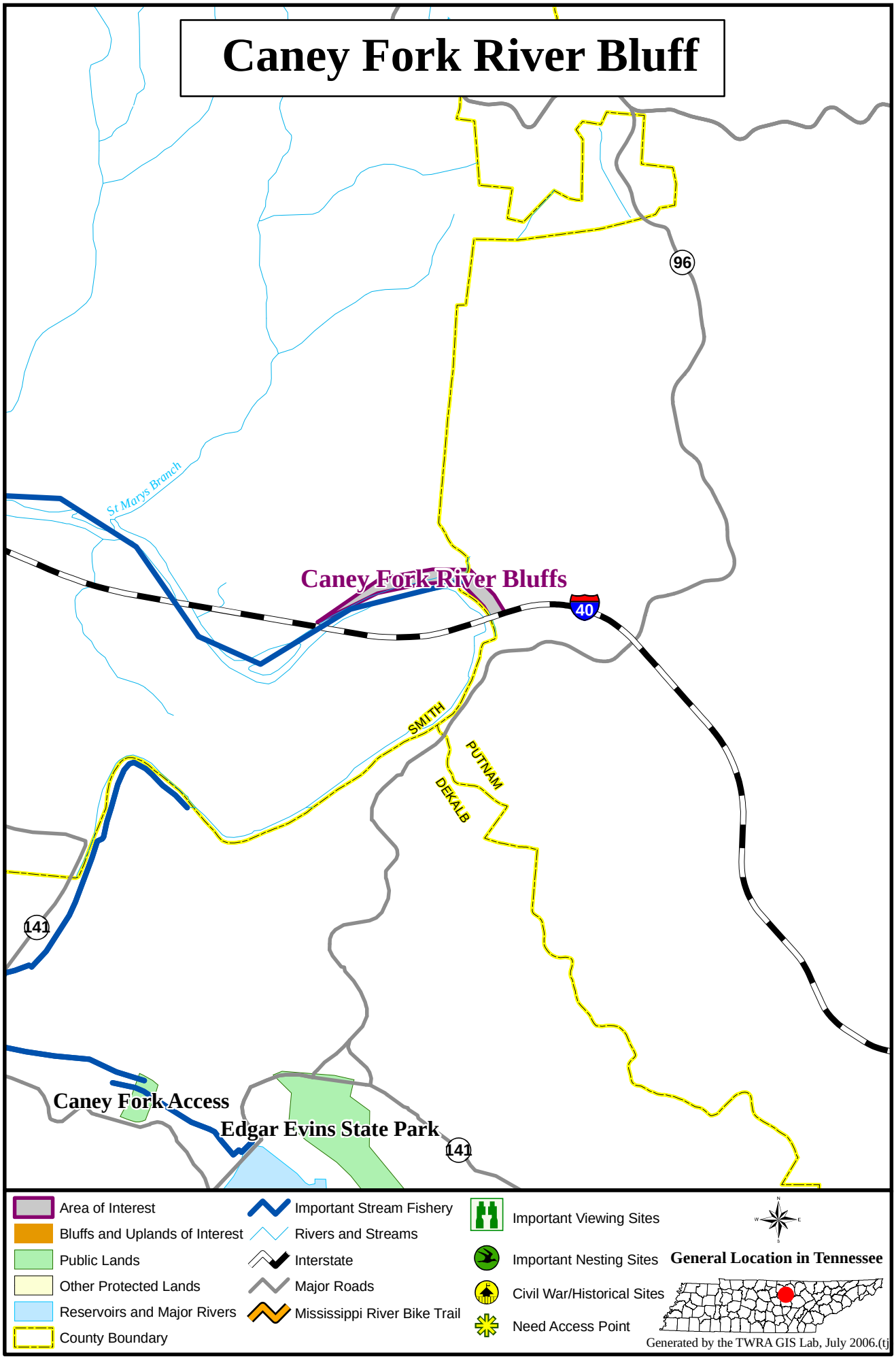
Significance – Site Importance High (B3) – Four rare plants, one rare bryophyte and one rare community exist on this site. The site harbors occurrences for Svenson's wild rye (*Elymus svensonii*), Harper's umbrella plant (*Eriogonum longifolium* var. *harperi*), western wallflower (*Erysimum capitatum*), and branching whitlow-grass (*Draba ramosissima*). This site is a high protection priority because it is the only known locality where these four species may be found together. An occurrence of the fragile tortula (bryophyte) (*Tortula fragilis*) is also present. The abundance of rare plant species on site may yet represent an undescribed forest community. The community is classified as *Quercus muehlenbergii-Quercus shumardii-Carya ovata* forest (Interior Plateau Chinquapin Oak-Shumard Oak forest).

Strategy - The strategy for acquisition would be to acquire this series of river bluffs and a setback from the top of the bluff adequate to buffer the rare plants and community on the bluffs. Fee simple acquisition or conservation easements could be utilized.

Land Protection Needs – 50 acres at an estimated cost of $100,000

Potential Partners – TDOT and TDEC.

Caney Fork River Bluff



CEDAR GROVE GLADE

Location – (N35.6943, W86.4124) Cedar Grove Glade Site is located in Rutherford County on the east side of Hwy 231, about 12 miles south of Murfreesboro.

Description –The site encompasses approximately 100 acres of limestone cedar glades, sinkholes and cedar forest thickets. The property is a commercial site for heavy equipment storage and is very disturbed on the road front portion. The owner applied for a quarry permit but was denied; however, he has excavated rock in the front portion of the site. At the time of the last survey of this site in 2006, the sinkhole, glades and forests in the back of the property were intact. A wet weather stream flows through the middle of the site. The rare plants are scattered throughout the site, but the Alabama snow-wreath population is restricted to the sinkhole. The Pyne's ground plum population was impacted by the storage of the heavy equipment and excavated rock. It is believed that the Pyne's ground-plum population has been extirpated.

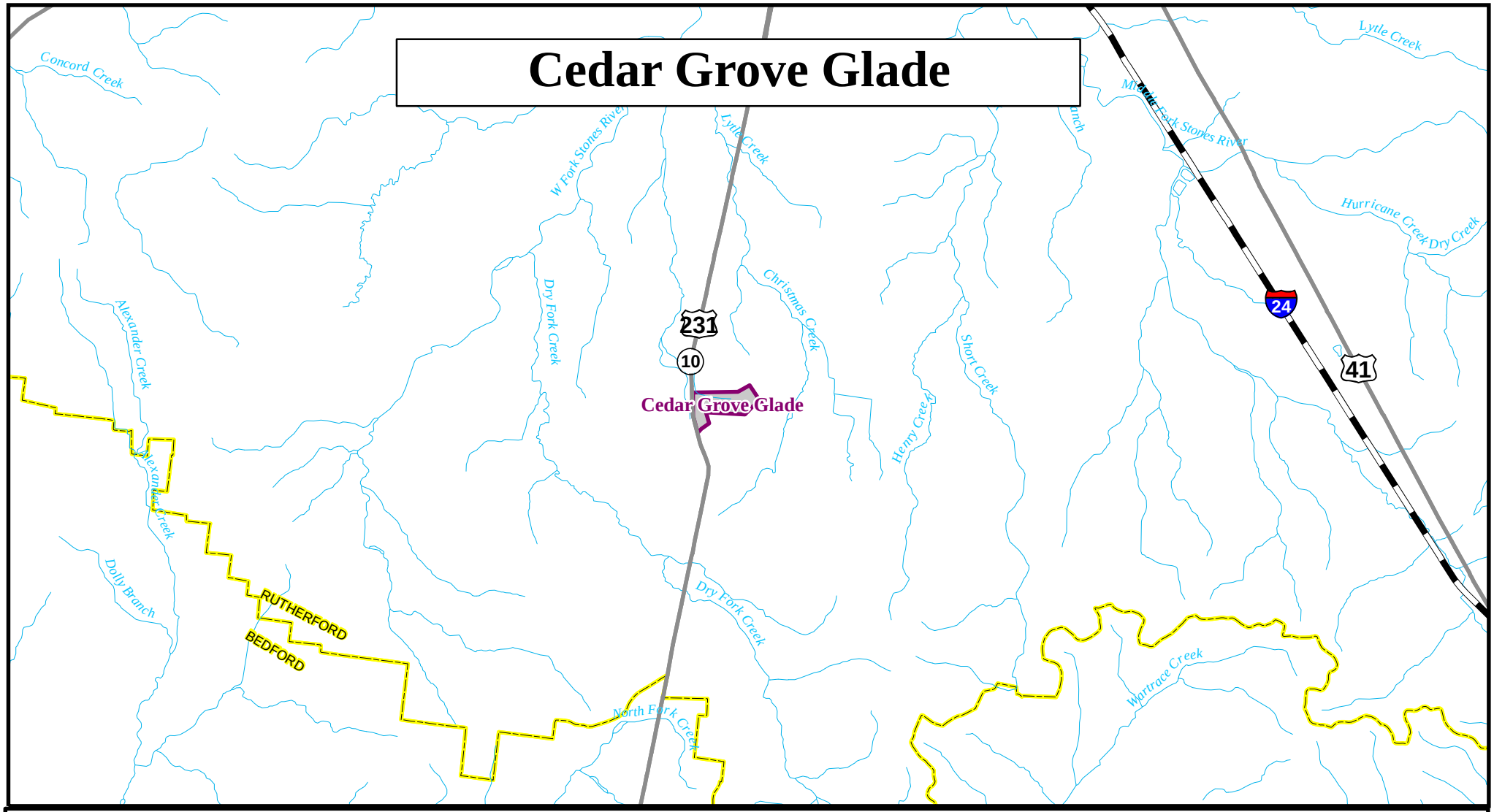
Significance – Site Importance Very High (B2) – Present at this site are two globally rare species. *Astragalus bibullatus* (Pyne's ground plum) is a listed federally endangered plant and is considered extremely rare and critically imperiled globally (G1). *Neviusia alabamensis* (Alabama snow wreath) is globally rare and imperiled (G2) and listed as state threatened. Other state listed species present at the site include *Polygala boykinii* (Boykin's, milkwort), *Astragalus tennesseensis* (Tennessee milk vetch), and *Onosmodium subsetosum* (false gromwell). Although the site has been disturbed, cedar glades habitats can be restored if the elements exist. The Alabama snow wreath population is important as it is one of only four known populations.

Strategy - Properties should be acquired within and adjacent to the site boundary for access control, preservation of rare species and cedar glade community type.

Land Protection Needs – 100 acres (perhaps less) at an estimated cost of $165,000

Potential Partners – TDEC and the USFWS

Cedar Grove Glade



- Area of Interest
- Bluffs and Uplands of Interest
- Public Lands
- Other Protected Lands
- Reservoirs and Major Rivers
- County Boundary
- Important Stream Fishery
- Rivers and Streams
- Interstate
- Major Roads
- Mississippi River Bike Trail
- Need Access Point
- Important Viewing Sites
- Important Nesting Sites
- Civil War/Historical Sites

General Location in Tennessee

Generated by the TWRA GIS Lab, July 2006.(tj)

CEDAR HILL SWAMP WMA

Location – (N36.5461, W86.9848) Cedar Hill Swamp is located in Robertson County northeast of Springfield along Hwy 41. The site is bisected by a railroad track and the center of the swamp is less than 1.0 mile southeast of the Cedar Hill town center.

Description - Cedar Hill Swamp is a forested, upland swamp of the Western Highland Rim. Its boundaries are easily discernable from the abrupt transition of forest or wetland to agriculture fields. On the southwest side of the railroad tracks, 164 acres are owned and managed by TWRA, but the site design includes an additional 220 acres. From wet to more mesic conditions, the dominant plant assemblages include swamp cottonwood, black willow, and button bush; red maple, blackgum, pin oak, cherrybark oak, willow oak, overcup oak, and sweetgum; and a more mesic assemblage of oaks including southern red, white, chestnut and black oaks. Annual flooding allows for a diversity of species with 33 birds, 13 amphibians/reptiles, and 50 woody plants documented.

Significance – Site Importance High (B3) – In their evaluation of Cedar Hill Swamp, Ellis and Chester (1982) considered the site one of the best examples of an oak swamp in the southern Pennyroyal Plain of Kentucky and Tennessee. Aside from the diverse wetland habitats there are three rare plants. *Carex buxbaumii* (brown bog-sedge) is listed as special concern and is considered extremely rare and critically imperiled in Tennessee. In Tennessee, it is known from only three counties. *Spiranthes odorata* (sweetscented ladies'-tresses) is state-endangered and like *C. buxbaumii* has a state rank of S1 and has only three extant occurrences from three counties. *Torreyochloa pallida* (pale manna grass, special concern/S1) occurs at the site and the only other known site for the species is Anderson Pond in White County Two other rare plants have been documented from Cedar Hill Swamp, but have not been seen since the late 1940s. It is possible that with additional inventories these rare species-and perhaps others-can be found.

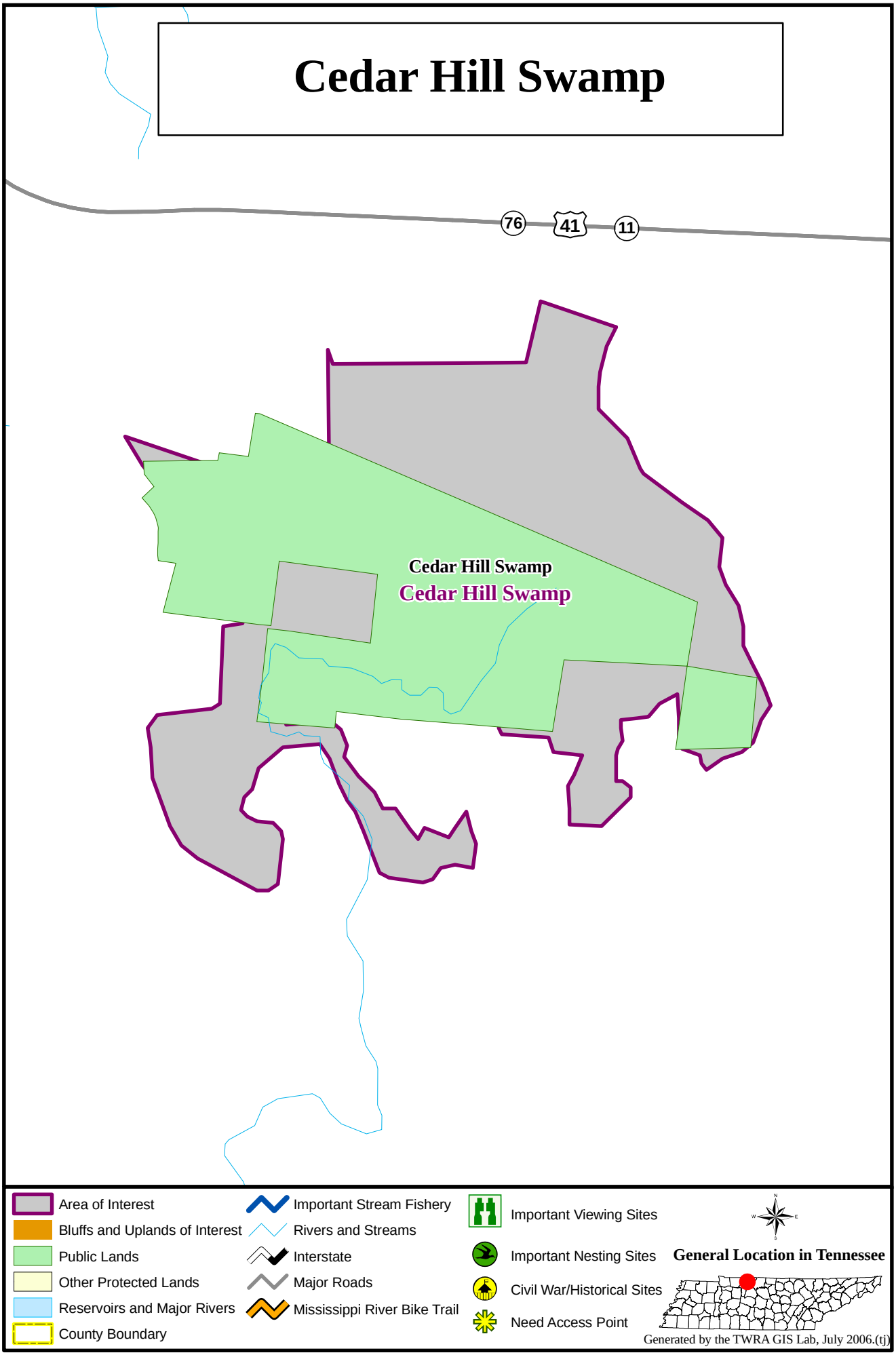
Strategy - The conservation strategy at Cedar Hill Swamp is to acquire additional wetland properties surrounding the existing wildlife management area. Additional botanical inventories would prove useful in delineating high-quality plant communities and updating existing rare plant records.

Land Protection Needs –220 acres at an estimated cost of $360,000

Potential Partners – TWRA and TDEC.

Reference - Ellis, W.H. and E.W. Chester. 1982. Evaluation of Cedar Hill Swamp Robertson County, Tennessee as a potential national natural landmark. Report to Division of Natural Landmarks, National Park Service, U.S. Department of the Interior.

Cedar Hill Swamp



CEDARS OF LEBANON STATE FOREST, SNA AND STATE PARK

Location – (N36.0829, W86.3354) Cedars of Lebanon is located in Wilson County approximately 9 miles south of I-40 at Lebanon on Hwy 231. This project also includes Vesta Cedar Glade and Vine Glade SNAs.

Description - Cedars of Lebanon State Forest (7,961 acres) originated from the Resettlement Administration. TDF assumed responsibility for the Forest in 1955. Before being purchased by the Resettlement Administration, numerous landowners with small acreage held the land. Land use was for row crops, pasture, and forests. The farmland was impoverished by erosion and the forestland was heavily cut, burned over, and damaged by grazing. About 14 % of the area is designated a Tennessee Natural Resource Area and contains at least two threatened or endangered plant species. The majority (85%) of the area is classified as forestland. Eastern red cedar is the predominant species and is found in pure stands on the very poor soils. On deeper soils and better sites it is found in mixture with hardwoods. The Forest includes 3 designated SNAs.

Cedars of Lebanon State Forest Natural Area is a 1,043-acre natural area contained within the 7,961 acre Cedars of Lebanon State Forest. 150-acre **Vesta Cedar Glade SNA** and 35 acre **Vine Cedar Glade SNAs** are also located in Cedars of Lebanon State Forest and are managed cooperatively by the Division of Forestry and the TDEC-Natural Areas Division. Each of these natural areas protects important populations of the rare Tennessee Coneflower as well as numerous other rare cedar glade flora and habitats, and are part of the largest contiguous cedar glade-barren complex in public ownership.

Cedars of Lebanon State Park consists of over 1,000 acres on the east side of Hwy 231 and roughly in the center of the State Forest. The park includes cabins, meeting rooms, swimming, group lodge, camping, picnicking, hiking, a nature center and approximately 6 miles of horse trails. Named for the dense Cedar Forest that existed in the Biblical lands of Lebanon, Cedars of Lebanon State Park is the home to the largest remaining stand of Red Cedars in the United States. In the mid 1930's land was purchased and combined into a single area for the purpose of replanting the "Red Cedars" which had been logged out for use in the pencil industry.

Significance – Site Importance Very High (B2) – The landscape scale of this forest, natural area, and state park area encompasses nearly all the plant communities associated with the karst topography in Middle Tennessee that supports cedar glades and barrens ecosystems. Cedar glades are commonly associated with limestone outcropping and shallow soil while barrens are prominent in deeper soils. Because of the presence of deeper soils and past fire suppression, many barrens that should be grassland have undergone succession and become cedar thickets and forests and require restoration using prescribed burning. Cedars of Lebanon also provide many excellent examples of cedar and cedar-hardwood forest community types, particularly where topography varies and there are rolling hills.

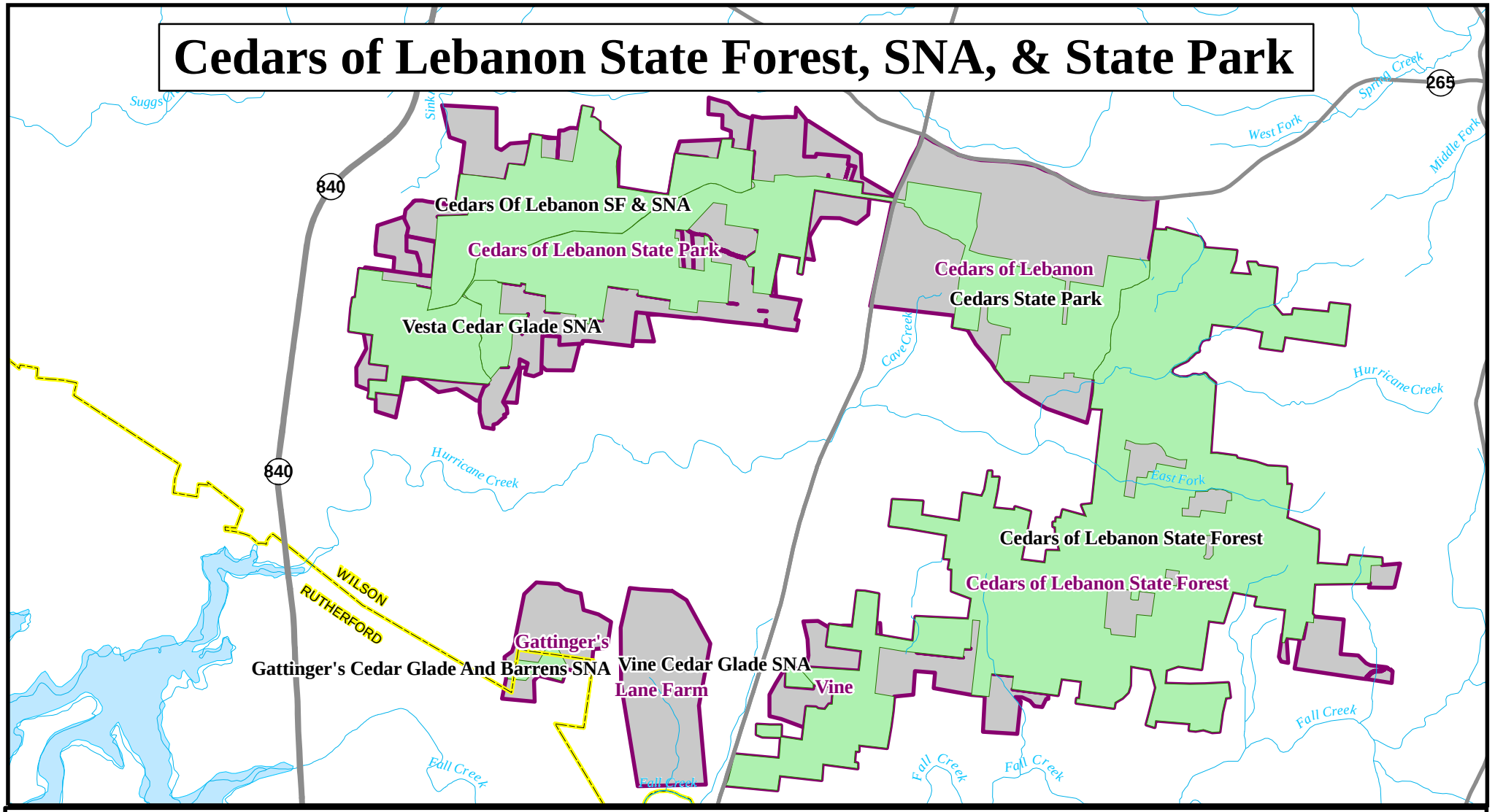
These ecologically significant glade and barrens complexes support many rare and endemic plants including the federally endangered Tennessee coneflower (*Echinacea tennesseensis*) and the federally endangered leafy prairie clover (*Dalea foliosa*). Some of the rare state species found here include Tennessee milk vetch (*Astragalus tennesseensis*), Evolvulus (*Evolvulus nuttallianus*), limestone flame flower (*Talinum calcaricum*) and yellow sunnybell (*Schoenolirion croceum*). There is much of this area's ecosystem that is fire dependent, particularly the barrens.

Strategy – The strategy for acquisition is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Access control is a major issue primarily to protect fragile species and ecosystems from motorized and non-motorized vehicle damage and is the main criteria for acquisitions. In-holdings and improvements to access the forests is the next level of criteria for acquisitions. Preservation of these communities, rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs - 3,405 needed acres at an estimated cost of $6,810,000.

Potential Partners – TDOF, TDEC

Cedars of Lebanon State Forest, SNA, & State Park



Generated by the TWRA GIS Lab, July 2006.(tj)

CHEATHAM WMA/HARPETH RIVER STATE PARK

Location – (N356.1265, W87.0584) Cheatham WMA is located approximately 5 miles south of Ashland City between the Cumberland and Harpeth Rivers in Cheatham County. The Harpeth River State Park is comprised of several separate sites along the Harpeth River in Cheatham and Davidson Counties. It includes the Narrows, Hidden Lakes, Newsome Mill, Mound Bottom and river access sites at Hwy 100 and Kingston Springs.

Description – Cheatham is predominantly a xeric-dry oak forest located on the Western Highland Rim. In the 19th century, this forest was heavily harvested to produce charcoal for several of the furnaces in the area. Approximately 20,800 acres were acquired by the TN Division of Game and Fish in the 1940's as a wildlife management area. The area was used as a source of animals for the early phases of the State's deer restoration program. Since the 1950's the area has been a favorite hunting destination for local sportsmen due to its close proximity to Nashville and has provided millions of days of hunting recreation. In recent years the area has become more important as prime habitat for many forest species since it is essentially a contiguous forested block in a region where forest fragmentation is becoming more common. As a result, the area is becoming more popular for bird watching and other wildlife recreational uses.

This project proposes to acquire two additional areas that border Cheatham. **Cave Springs Home** is composed of 918 acres on the south boundary of Cheatham. The majority of the land is covered in upland oak hickory forest. **West Cheatham** includes approximately 1,300 acres on the west boundary of Cheatham near the Harpeth River, Narrows of the Harpeth State Historic Area, and Mound Bottoms State Park properties.

This land acquisition would extend the boundaries of the Cheatham WMA. Cheatham County is being developed at a rapid rate and habitat conservation should be a high priority. This area is inhabited by many target species listed in TWRA's Comprehensive Wildlife Conservation Strategy. Those include sharp-shinned hawk, Chuck-will's-widow, whip-poor-will, yellow-billed cuckoo, eastern wood pewee, Acadian flycatcher, worm-eating warbler, wood thrush, orchard oriole, red-headed woodpecker, Kentucky warbler, yellow-throated vireo, hooded warbler, bald eagle and the cerulean warbler that is deemed in-need-of-management.

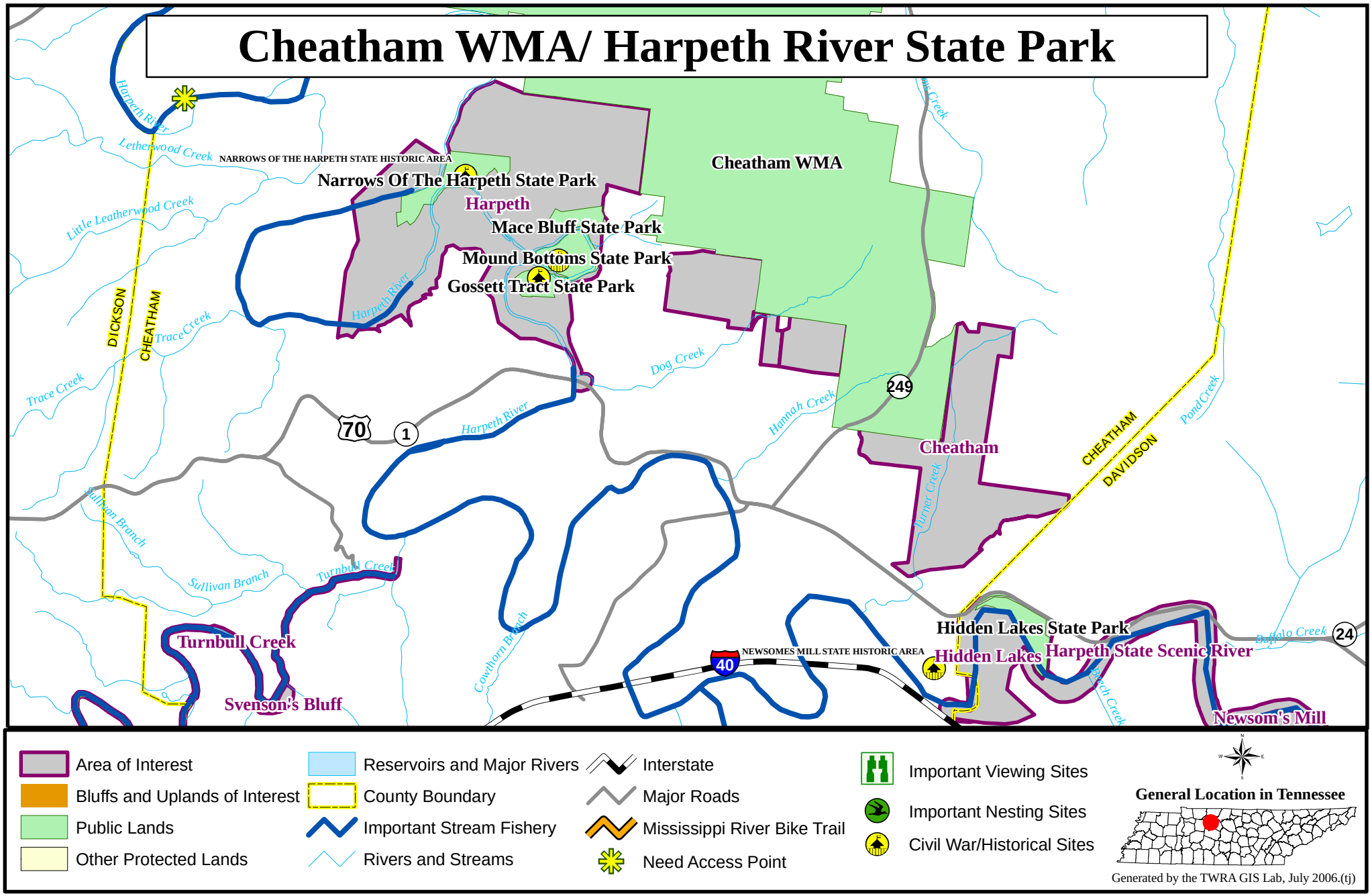
Acquisition of these properties would also afford greater protection to the watershed of the Harpeth River which is habitat for eight aquatic species of conservation need. Those include three federally endangered bivalves (dromedary pearly mussel, purple cat's paw pearly mussel, and winged mapleleaf), the finescale darter (federally listed as of management concern) Tennessee snaketail dragonfly, painted creekshell mussel, geniculate river snail, and Tippecanoe darter.

Harpeth River State Park provides canoe access, hiking trails and a collection of historic and cultural sites. **The Narrows of the Harpeth** is an ideal spot for hiking, picnicking, fishing and canoeing. It is also the site of one of the oldest man-made tunnels in Tennessee. **Mound Bottom** is a large Mississippian Mound Complex. **Hidden Lake**

is a naturalist's paradise featuring hiking trails, bluffs and abundant wildlife, while. **Newsom's Mill** is one of the oldest gristmill sites in Davidson County. Hidden Lake and Newsom's mill are also part of the Harpeth River which has been designated a state scenic river.

Lands Protection Needs – WMA - 2,217 acres at an estimated cost of $3,000,000; State Park – 1,230 acres at an estimated cost of $2,178,000.

Potential Partners – TWRA, TDEC, and the Land Trust for Tennessee


Cheatham WMA/ Harpeth River State Park
Harpeth River
Leatherwood Creek
NARROWS OF THE HARPETH STATE HISTORIC AREA
Narrows Of The Harpeth State Park
Harpeth
Mace Bluff State Park
Mound Bottoms State Park
Gossett Tract State Park
Cheatham WMA
Little Leatherwood Creek
DICKSON
CHEATHAM
Trace Creek
Harpeth River
Dog Creek
Hannah Creek
249
70
1
Harpeth River
Cheatham
CHEATHAM
DAVIDSON
Pond Creek
Turner Creek
Sullivan Branch
Sullivan Branch
Turnbull Creek
Turnbull Creek
Cowthorn Branch
Hidden Lakes State Park
NEWSOMES MILL STATE HISTORIC AREA
40
Hidden Lakes
Harpeth State Scenic River
Buffalo Creek
24
Beech Creek
Svenson's Bluff
Newsom's Mill
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

COLLINS TRIFOLIUM GLADE / ROCKY HILL ROAD GLADES

Location – (N35.9768, W86.3598) These two adjacent sites are located in Rutherford County on either side of Rocky Hill Road, just north of Holly Grove Road and east of Hwy 231.

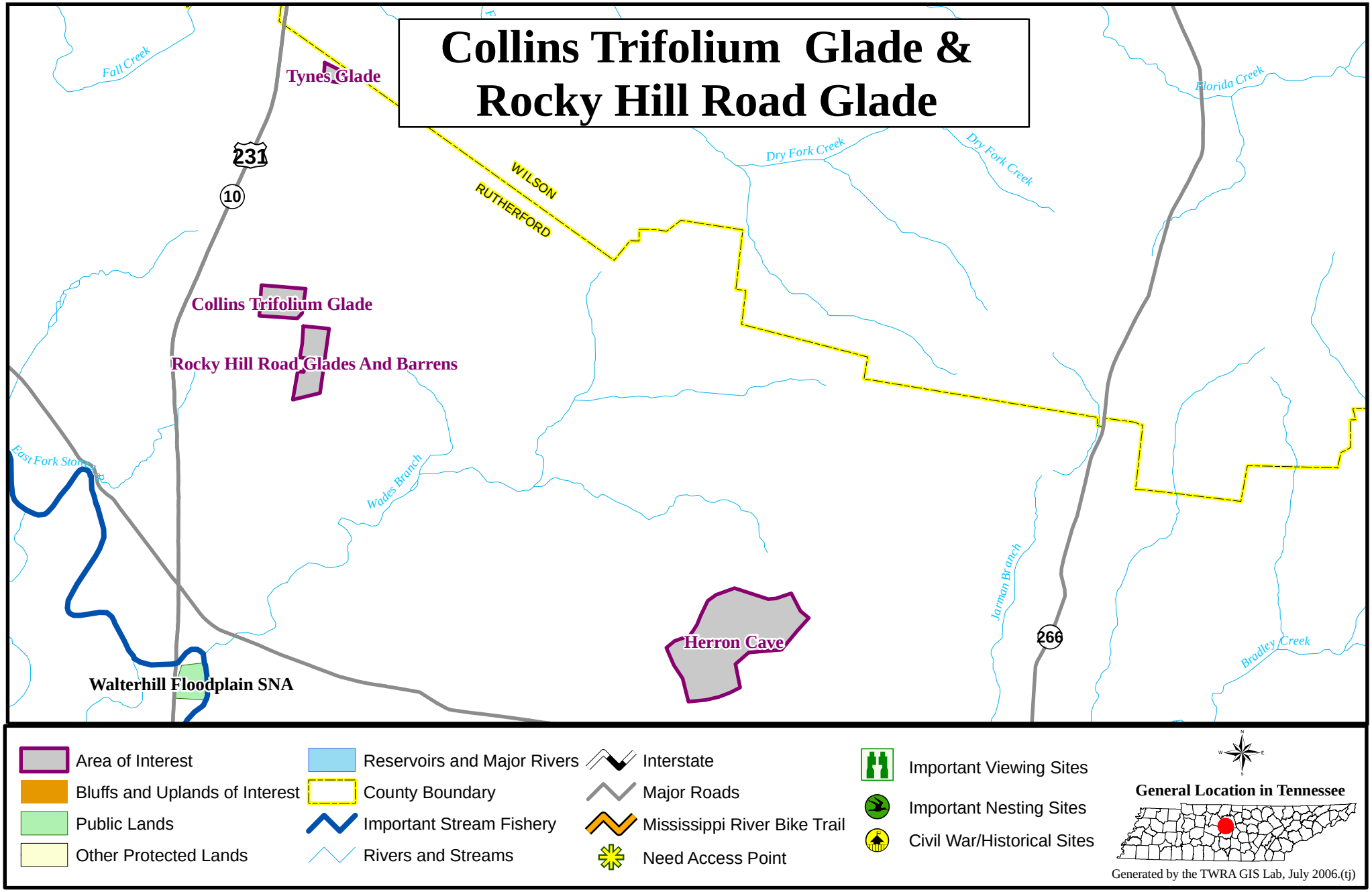
Description – The two sites together comprise 105 acres and are bisected by Rocky Hill Road. The habitat consists of Central Basin limestone cedar glades and barrens and dry limestone cedar/hardwood forests. The area is a mosaic of glades, barrens and dry woods. Cedar glades are easily recognizable habitats which lack tree canopy, often have exposed limestone at the surface, and the few woody plants (e.g. mainly eastern red cedar and glade privet) which do occur are often stunted. Even in these harsh conditions the area contains some showy plants such as Nashville breadroot (*Pediomelum subacaule*), rose vervain (*Glandularia canadensis*), star grass (*Hypoxis hirsuta*), etc. The barrens portion of the site is generally found on the edges of glades and is warm-season grass dominated. A portion of the east side of the road has a wet-weather conveyance which flows through the glade during the winter and spring.

Significance – Site Importance Outstanding (B1) – These habitats along Rocky Hill Road support five state listed plant species, and one federally listed species. Leafy prairie clover (*Dalea foliosa*), a federally endangered plant, is rare and uncommon globally. Although not listed at the federal level, the most significant species present is running glade clover (*Trifolium calcaricum*) located on the west side of the road. The species was first discovered by Leo Collins, botanist with the Tennessee Valley Authority, in 1979. A few years later he and another botanist from Virginia, Tom Wieboldt, found the species in Virginia and then described it as new to science. World-wide there are only seven known occurrences of this species, and although two occurrences are within a Virginia SNA, no Tennessee populations are protected. Running glade clover is truly a rare species and has been searched for at length by Tennessee Division of Natural Area botanists. Additional state-listed plants known from the sites include Tennessee milk-vetch (*Astragalus tennesseensis*), glade cleft phlox (*Phlox bifida* ssp. *stellaria*), which in Tennessee is restricted to the Stones River Watershed, sunnybells (*Schoenolirion croceum*) a striking spring-flowering plant of the lily family which occurs in the wet-weather washes of the glades, and limestone fame flower (*Talinum calcaricum*) which grows on open pavement-like limestone glades.

Strategy - The strategy for acquisition at Collins Trifolium Glade and Rocky Hill Road Glades is to preserve enough of the site to at least protect running glade clover, a species which could easily be extirpated from Tennessee. Properties on the east side of Rocky Hill Road should be targeted to protect significant occurrences of glade cleft phlox, sunnybells and leafy prairie clover.

Land Protection Needs – 105 acres at an estimated cost of $172,500.

Potential Partners – TDEC, USFWS. and Middle Tennessee State University.


Collins Trifolium Glade &
Rocky Hill Road Glade
Tynes Glade
Collins Trifolium Glade
Rocky Hill Road Glades And Barrens
Herron Cave
Walterhill Floodplain SNA
231
10
266
WILSON
RUTHERFORD
Fall Creek
Dry Fork Creek
Dry Fork Creek
Florida Creek
Wades Branch
Jarman Branch
Bradley Creek
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

CUMBERLAND RIVER (HAYNES BOTTOMS/SHELTON FERRY)

Location – (N36.4537, W87.4993 and N36.3978, W87.2809) The Cumberland River (Haynes Bottoms and Shelton Ferry) project area is located along the Cumberland River floodplain in Montgomery County, approximately twelve miles southwest of Clarksville in the Dotsonville community.

Description - The project is adjacent to the Cumberland River with a small-forested riparian zone with broad alluvial bottomland agricultural fields that transition to grass and forested bluffs and back to agricultural fields. The upland areas are gently rolling with fields and scattered stands of forest. The fields are in agricultural production.

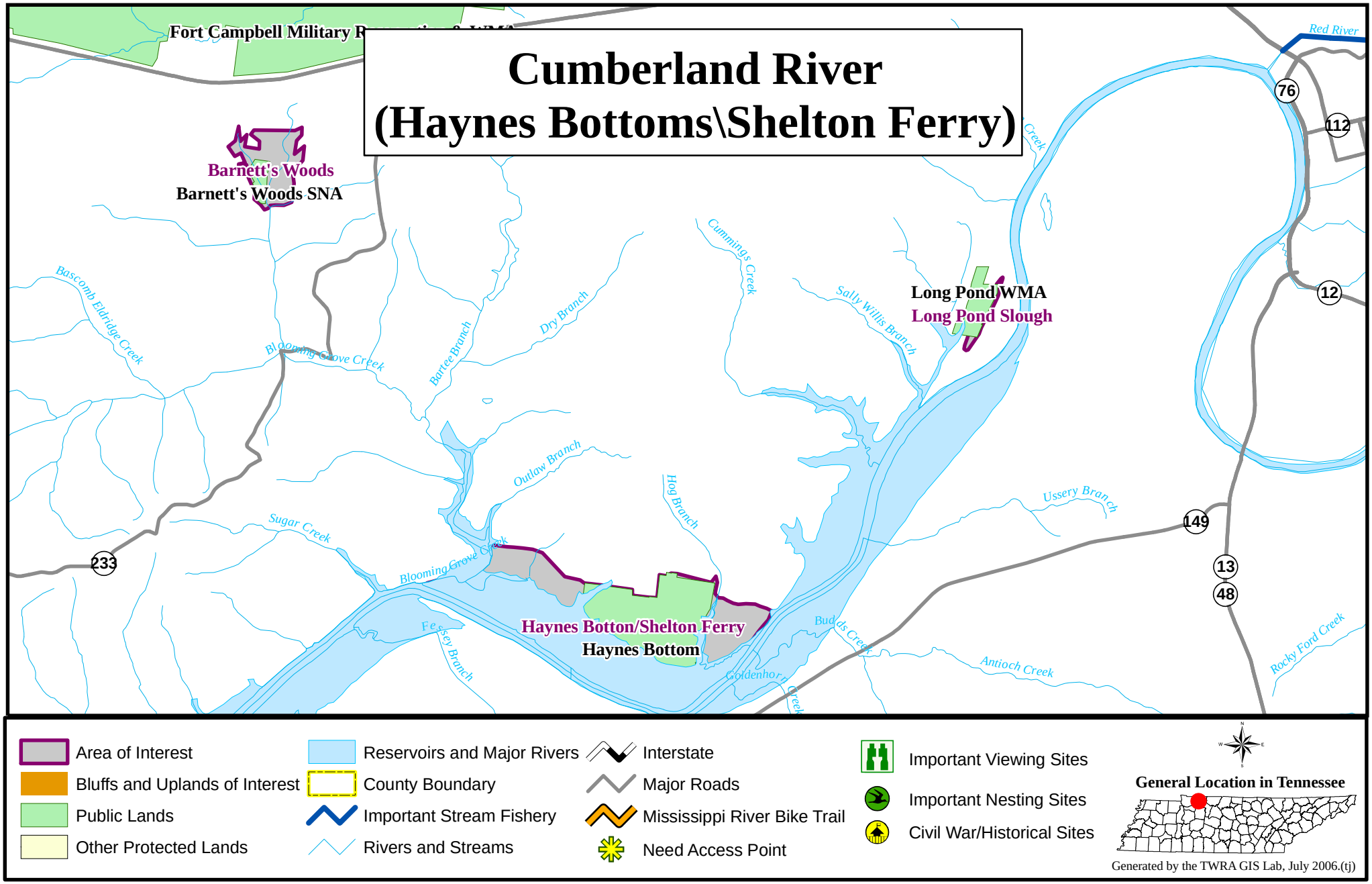
Significance - The Cumberland River watersheds of middle Tennessee serve as secondary migration corridors for waterfowl within the state of Tennessee. However, it is a major migratory corridor for migrating Canada Geese, particularly the Southern James Bay population. This project will be managed to protect critical wetlands and wetland-associated habitats, meet the habitat needs for waterfowl in middle Tennessee along the Cumberland River, as identified by the TWRA Strategic Plan for Waterfowl, and to provide important habitat benefits for priority waterfowl, neo-tropical migratory birds, shorebirds, waterbirds, and other migratory and non-migratory bird species of the Central Hardwoods Bird Conservation Region.

These areas fall within the geographic area covered by the Partners in Flight Interior Low Plateau Bird Conservation Plan and the Lower Tennessee-Cumberland Ecosystem Bird Conservation Plan and the Central Hardwoods BCR Implementation Plan. Wetland and grassland restoration on these properties will help meet habitat objectives for a number of priority species identified in these plans including American woodcock, Acadian flycatcher, Louisiana waterthrush, red-headed woodpecker, prothonotary warbler, worm-eating warbler, Kentucky warbler, field sparrow, grasshopper sparrow, eastern meadowlark, dickcissel, and northern bobwhite quail.

Four Tennessee-listed plant taxa are found on Haynes Bottom WMA. Similar habitats exist on the adjoining lands and therefore should provide suitable habitat for these listed species that include Short's rock cress, blue scorpion weed, short-beaked arrowhead and rock goldenrod.

Land Protection Needs – 1,750 acres at a cost of $3,795,360.

Potential Partners – DU and TWRA.


Cumberland River
(Haynes Bottoms\Shelton Ferry)
Fort Campbell Military R
Barnett's Woods
Barnett's Woods SNA
Long Pond WMA
Long Pond Slough
Haynes Botton/Shelton Ferry
Haynes Bottom
Red River
Cummings Creek
Sally Willis Branch
Dry Branch
Bartee Branch
Bascomb Eldridge Creek
Blooming Grove Creek
Outlaw Branch
Hog Branch
Ussery Branch
Sugar Creek
Fessey Branch
Budds Creek
Goldenhorn Creek
Antioch Creek
Rocky Ford Creek
76
112
12
149
13
48
233
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

CUMBERLAND RIVER BLUFFS AT HARTSVILLE AND OLDHAM ROAD

Location – (N36.3768, W86.2180 and N36.37.68, W86.2166) Both of these bluff areas are located in Trousdale County on the Cumberland River, just south of Hartsville.

Both sites are south-facing, steep, wooded limestone bluff with 50-90% canopy cover. There are numerous rock ledges with shallow soil and herbaceous and shrub vegetation. This part of the Cumberland River is in the Old Hickory Lake Reservoir and managed by the USACE, however, the bluffs are private property. The water levels are controlled and probably fluctuate seasonally.

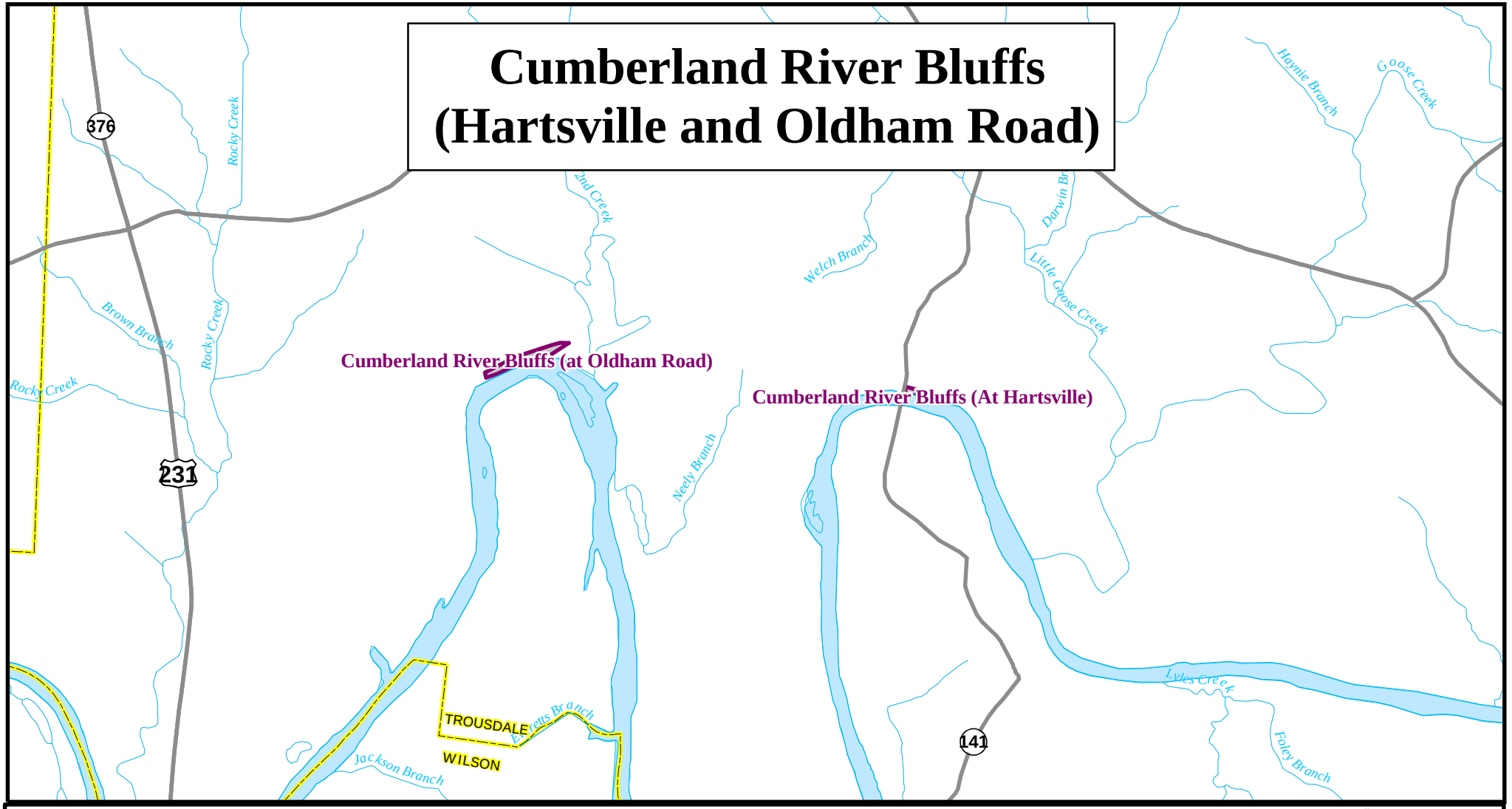
Significance - Site Importance High (B3). These sites consist of a moderate sized population of Short's bladderpod, *Lesquerella globosa*, a globally rare and imperiled(G2) species listed as state endangered. It is also listed as a "candidate for federal status" by the USFWS. Another rare plant species at these sites is *Stellaria fontinalis* (water stitchwort), which is listed as state threatened and is globally ranked as rare/vulnerable (G3).

Strategy - The strategy for acquisition of this site is to acquire properties within and adjacent to the site boundary for access control, watershed protection, and preservation of the rare species. There are no protected sites for Short's bladderpod in Tennessee and most of the sites are on the bluffs of the Cumberland River.

Land Protection Needs – 23 acres at an estimated cost of $45,000.

Potential Partners – TDEC, USFWS, and USACE.

Cumberland River Bluffs (Hartsville and Oldham Road)



Generated by the TWRA GIS Lab, July 2006.(tj)

CUMBERLAND RIVER BLUFFS AT SULPHUR SPRINGS

Location – (N36.2416, W87.0405) The Cumberland River Bluffs at Sulphur Springs site (also known as the Marrowbone Creek site) is located in Cheatham County near Ashland City.

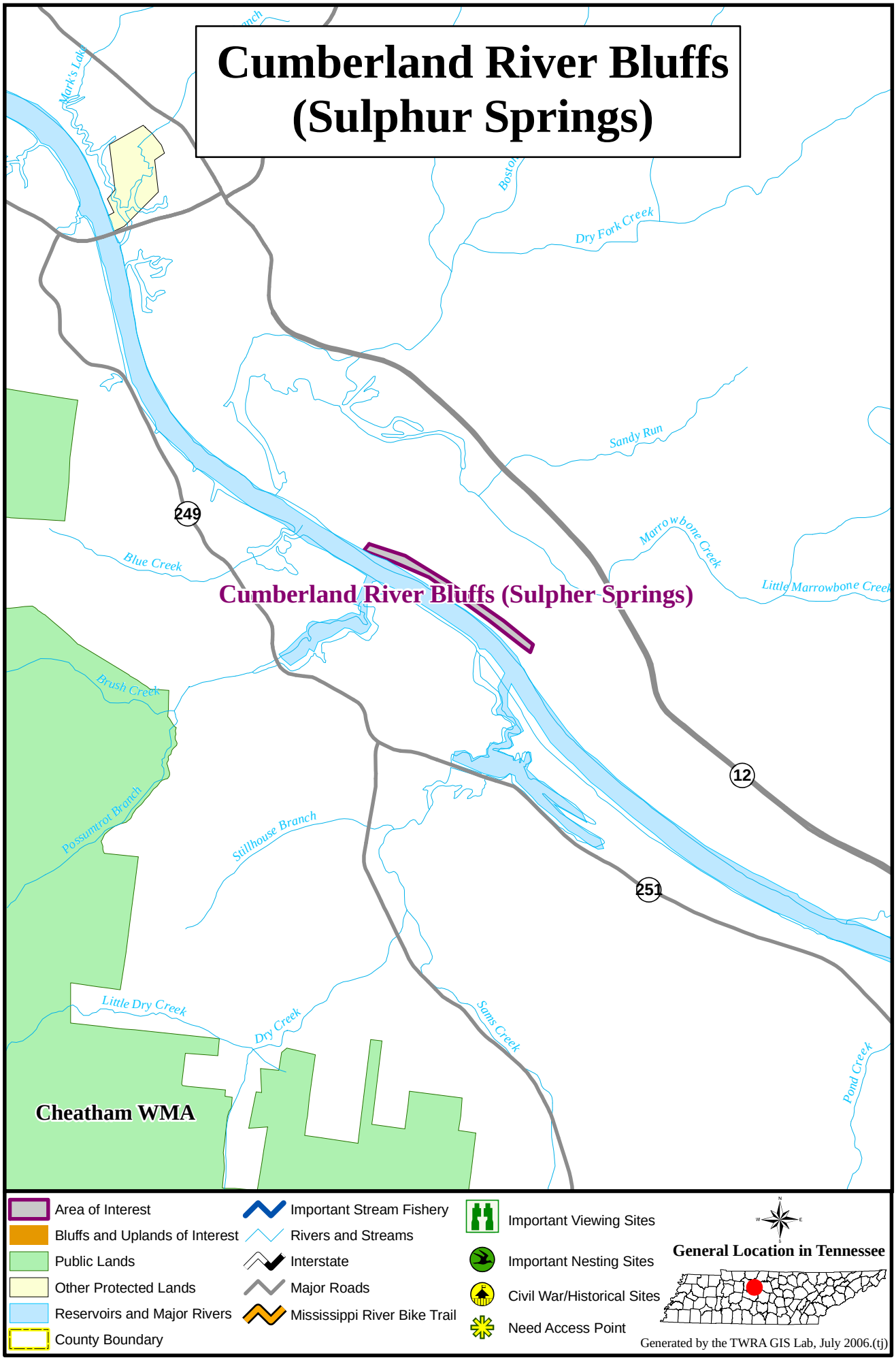
Description – The site encompasses approximately 33 acres along the limestone bluff line on the north side of the Cumberland River. A railroad runs along the base of the slope. The Short's bladderpod plants are growing along the railroad bed, on the ledges of the steep, open south-facing bluff and in talus at the base of the cliff. In 1998, it was observed that the site area had burned recently.

Significance – Site Importance High (B3). The site consists of a large population of Short's bladderpod, *Lesquerella globosa*, a globally rare (G2) species, and is state endangered. It is also listed as a candidate for federal status by the USFWS. In 1998, approximately 1,000 plants were scattered for 1 mile along the old railroad and bluff. The railroad along this stretch has not been operational for many years, however, maintenance is still done with clearing and herbicide spraying. This is a definite threat to the bladderpod population.

Strategy - The strategy for acquisition of this site is to acquire properties within and adjacent to the site boundary for access control, watershed protection, and preservation of the rare species. This is the largest site for Short's bladderpod in Tennessee. There are no protected sites for this species in Tennessee with most of the sites on the bluffs of the Cumberland River.

Land Protection Needs – 33 acres at an estimated cost of $66,000.

Potential Partners – TDEC, USFWS, and USCOE.


Cumberland River Bluffs (Sulphur Springs)
Cumberland River Bluffs (Sulpher Springs)
Cheatham WMA
Mark's Lake
Dry Fork Creek
Sandy Run
Marrowbone Creek
Little Marrowbone Creek
Blue Creek
Brush Creek
Possumtrot Branch
Stillhouse Branch
Little Dry Creek
Dry Creek
Sams Creek
Pond Creek
249
12
251
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
Need Access Point
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

DAVID CROCKETT STATE PARK

Location – (N35.2650, W87.3618) David Crockett State Park is located off Highway 64, west of Lawrenceburg in Lawrence County.

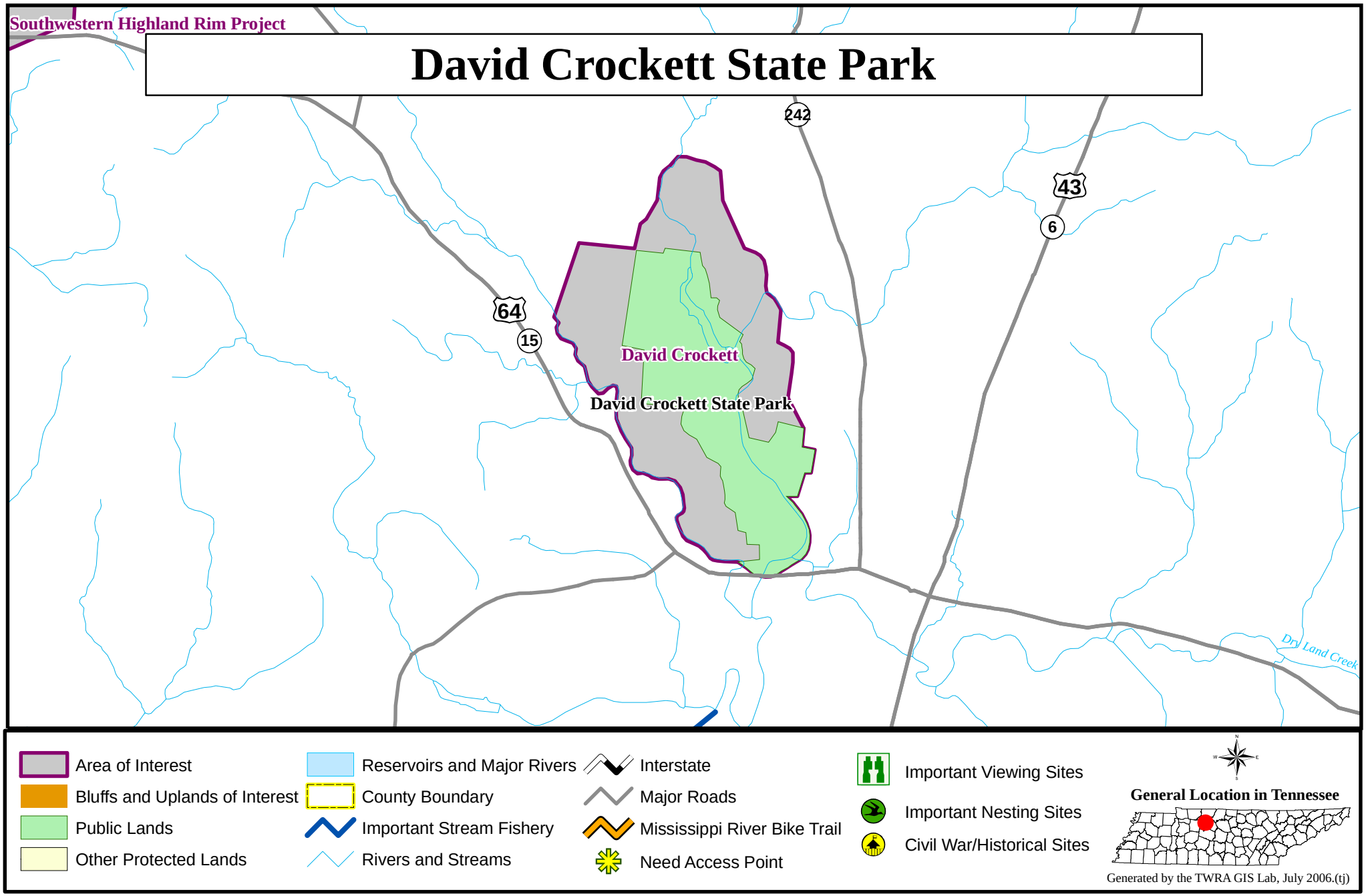
Description - David Crockett State Park was dedicated in 1959 in honor of one of Tennessee's favorite sons. The park has 1,100 acres with a lake where whitetail deer and wild turkeys can be easily viewed as you drive through the park.

Significance - David Crockett-pioneer, soldier, politician, industrialist, legislator, statesman, patriot and hero established a diversified industry consisting of a powder mill, gristmill and a distillery along the bank of Shoal Creek in what is now his namesake park. All three operations were washed away in a flood in 1821.

Strategy - The strategy for future acquisitions for David Crockett State Park is to acquire properties surrounding the park that enhance the wildlife, aesthetics, interpretive and recreation mission of the park.

Land Protection Needs – 603 acres at an estimated cost of $1,370,000.

Potential Partners – TDEC, TCF and other land conservancy groups.


Southwestern Highland Rim Project
David Crockett State Park
242
43
6
64
15
David Crockett
David Crockett State Park
Dry Land Creek
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

DEVIL'S BACKBONE AREA

Location – (N35.6005, W87.3952) Devil's Backbone is located on the Western Highland Rim in Lewis, Hickman and Maury Counties. The project area is between Mt. Pleasant and Hohenwald and is bisected by the Natchez Trace Parkway. The area includes Devil's Backbone SNA, Hickman County Bat Cave, Langford Branch Designated SNA, Sandy Mitchell Hollow, and Twin Falls Hollow.

Devil's Backbone SNA (N35.5949, W87.3951) (Site Importance – B4) offers a visitor the opportunity for a quiet hike in a natural environment little affected by modern human action. It is located off of the Natchez Trace Parkway out along the ridges of Tennessee's Highland Rim. It is a highly dissected landscape with steep dry ridges and unfragmented forest.

Devil's Backbone has many important values that make it a significant ecological preserve. Its single most important value is community diversity. Many of the upland vegetation types of the Western Highland Rim occur here. These include: 1) white oak-northern red oak-hickory forest, 2) chestnut oak forest, 3) chestnut oak-black oak-hickory forest, 4) beech-tuliptree-white oak-sugar maple forest, 5) chestnut oak-shortleaf pine forest, 6) white oak-northern red oak-tuliptree forest, 7) scarlet oak-southern red oak-mockernut hickory forest and, 8) sycamore-tuliptree-beech forest.

Not many high quality examples of Western Highland Rim forest communities are known to exist because of present and past land use patterns. While Devil's Backbone represents second or third growth forest, it is unlikely many other sites on the Western Highland Rim will be identified that better represent the region's upland vegetative types. The forested area outside the existing boundary provides an important buffer and creates a much larger landscape scale ecosystem. The integrity is further improved since there is little exotic pest plant invasion compared to many other areas in the region. Another value relates to its recognition as a Class 1 scenic - recreation area. It can support day use activities and provide education opportunities regarding natural area values without impairing sensitive ecological areas. This opportunity is enhanced because of its location on the Natchez Trace Parkway.

The strategy for acquisition at Devil's Backbone is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Hickman County Bat Cave (N35.6327, W87.4390) (Site Importance B3) occurs in the Leipers formation and Brassfield limestone. According to Barr (1961): "Bat Cave is the largest known cave in Hickman County. Apparently, it is a tunnel cave, which is more than 3,000 feet in length. A stream sinks at the upper mouth and emerges at a cave on the bank of Swan Creek at an elevation of 580 feet. The writer has explored both upper and

lower caves but has not attempted to penetrate the low, wide, bedding-plane crawlway by which they are presumably connected. The upper mouth is 60 feet wide and 15 feet high. For 2,000 feet the cave adopts a sinuous course, but the predominant direction is southwest. Near the mouth the cave is rather large, but the average dimensions are 15 feet high and 5 to 10 feet wide. The lower mouth, which opens in a bluff, is 30 feet wide and 12 feet high. Within a short distance the ceiling height drops to 4 feet. This section of the cave was explored for 300 feet, and, although the width remains about 10 feet, the ceiling becomes progressively lower. Bat Cave is well known to the local residents, and the creek bank in front of the lower mouth is a favorite site for picnics." The total length of mapped passages is 3,000 ft (upper cave) and 500 ft (lower cave) (Tennessee Cave Survey, 2003).

This cave is home to a large summer roost of the state and federally endangered gray bat (*Myotis grisescens*). This species is considered vulnerable and imperiled (G3S2). A population of 10,000 gray bats was reported in the summer of 2002 (Harvey, 2002). Previous observations recorded in the DNA Biotics database indicate that this may be a maternity roost. The cave also supports a population of the eastern woodrat (*Neotoma magister*), deemed in-need-of-management. With the presence of woodrats and gray bats, the cave likely supports a diverse assemblage of cave-obligate invertebrates, many of which are extremely rare and narrowly endemic to the region.

The primary concern for the conservation of the gray bat is uncontrolled access. Disturbance of gray bats during roosting periods can significantly reduce colony size, and ultimately drive them away. In addition to protecting an initial one-acre around each entrance of the cave, the cave may need to be posted to discourage inappropriate access. Acquisition of additional acreage will provide for establishment and maintenance of a forested corridor from the entrances to Big Swan Creek, over which the bats may be expected to feed. Ideally, the entire recharge area of the cave should be acquired to protect it from incompatible land use.

Langford Branch (N35.5698, W87.3352) (Site Importance B2) is a 23-acre natural area in Lewis County owned by the Swan Conservation Trust. It is a forested landscape and supports a small Xyris seep. The steep slopes on the property support an oak barrens community.

Langford Branch is significant because of the occurrence of a population of the federally endangered Tennessee yellow-eyed-grass (*Xyris tennesseensis*), which is found in a small seep on the property. The seep is formed from a Paleozoic deposit of gravel and sand in a calcareous matrix, bounded over and beneath by shale. Tennessee yellow-eyed grass is one of the rarest plant species in the state, and is known only from locations in Lewis County. It occurs outside of Tennessee in only a few places in Georgia and Alabama. Tennessee yellow-eyed grass was first described to science in the 1980's from plants collected at Langford Branch by Dr. Robert Kral, who at the time was professor of botany at Vanderbilt University.

Langford Branch is a small hilly area that is mostly under an oak-hickory forest canopy. The steepest slopes support a good example of a small barrens grassland community with little bluestem and many species of legumes and sunflowers present. These steep slopes are underlain by cherty Fort Payne limestone outcroppings with eastern red cedar, post oak, and few other tree species growing where soils permit. The seep community occurs in an open area and is referred to as a Parnassia seep. The rare state listed Grass of Parnassia (*Parnassia grandifolia*) covers large areas of the seep. It is easy to identify because of its large round shaped leaves. The rare shorted-headed rush (*Juncus brachycephalus*) also occurs in this seep. This Parnassia seep community is ranked as a globally rare community type.

Sandy Mitchell Hollow (N35.57605, W87.3402) (Site Importance B2) is deeply dissected with calcareous sloping seeps along the steep stream banks of a small gravel bottomed stream. Herbaceous cover is relatively thick and the substrate is rarely visible. Such thin soiled calcareous sloping seep communities are very fragile unique habitats with a very limited distribution.

The focus of the site conservation plan for Sandy Mitchell Hollow will be protection of a population of *Xyris tennesseensis.* Protection and conservation of this species' very unique habitat is critical for its continued persistence and survival. *X. tennesseensis* generally inhabits seep slopes, spring meadows, or the banks of small streams in open or thinly wooded, wet habitats with calcareous rocks often at or near the surface. The population at Sandy Mitchell Hollow was first observed in 1984. The species was most often found at the site growing in association with the woody species *Alnus serrulata* and *Cornus amomum.* The surrounding tree canopy was dominated by various species of oak and hickory, particularly *Quercus alba* and *Fagus grandifolia.* Common associated herbs included *Amphicarpea bracteata, Parnassia grandifolia*, and *Rudbeckia fulgida.* Other associated herbs included *Cyperus strigosus, Impatiens campensis, Juncus brachycephalus, Lobelia siphilitica, Ludwigia alternifolia, Microstegium vimineum, Muhlenbergia sylvatica, Oxypolis rigidior*, *Phlox glaberrina*, *Polygonum spp, Scirpus cyperinsus, and Solidago uliginosa.* Two of these species are listed special concern plants in Tennessee: *J. brachycephalus* and *P. grandifolia*. Another species documented from this site is *Liparis loeselii* listed as state threatened. *J. brachycephalus*, *P. grandifolia*, and *Xyris tennesseensis* are also considered part of the larger globally rare seep community, the *Carex lurida-Carex leptalea-Parnassia grandifolia-Juncus brachycephalus* herbaceous community. This community generally forms on steep slopes with thin-layered soils containing slate. Layers of this soil and slate tend to gradually slough off serving as a means to retain the open habitat required by these plants.

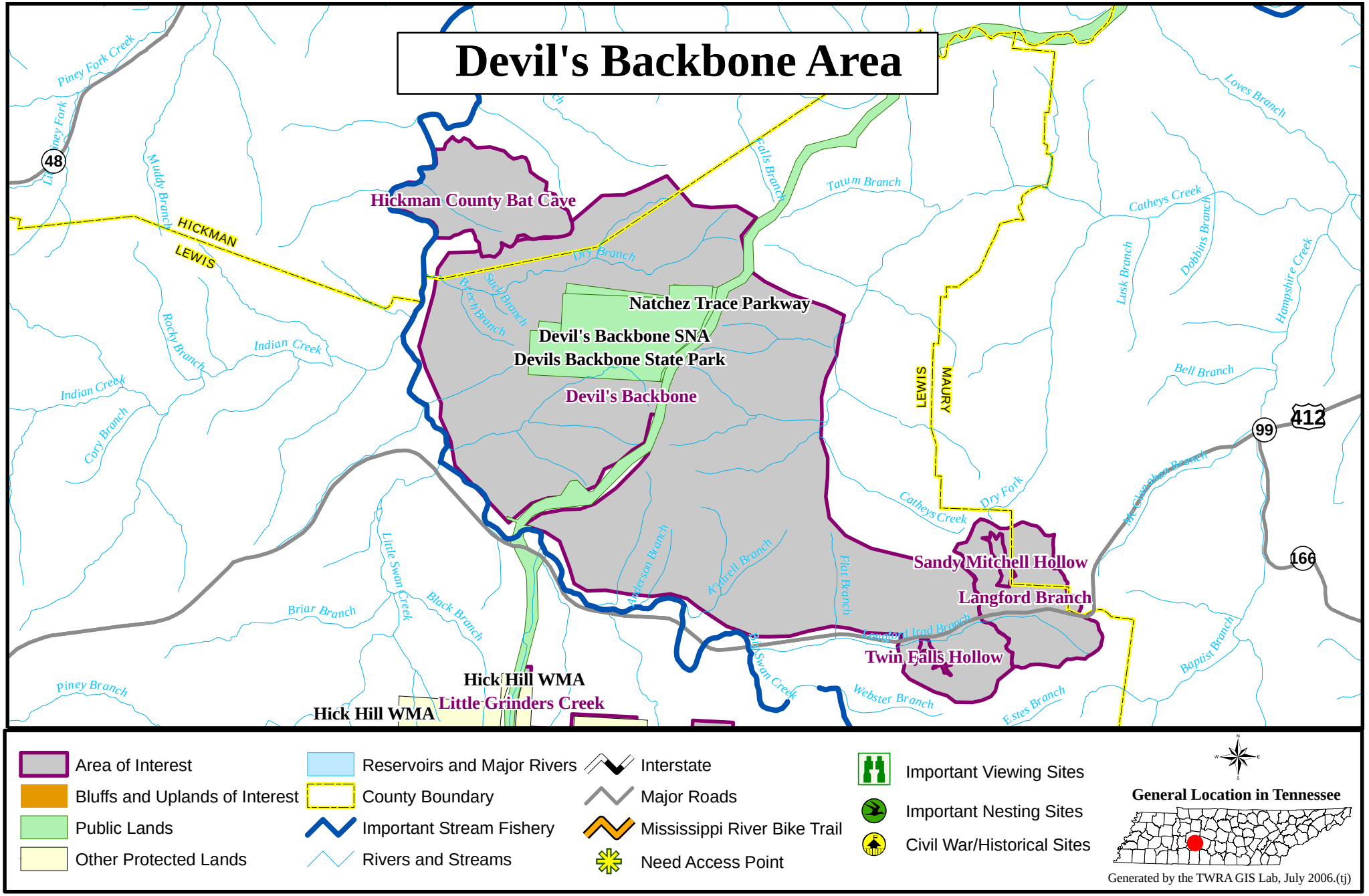
To date, the private landowner at Sandy Mitchell Hollow has been unwilling to enter into any agreements that would aid in the protection of the site. Knowing this, the current strategy is to continue dialogue with the landowner in hopes of obtaining such an agreement, particularly a conservation easement.

Twin Falls Hollow (N35.5612, W87.3533) (Site Importance B1) consists of a series of six calcareous seeps located along steep stream banks of a gravel-bottomed creek. The seeps are considered to be the largest such examples of this community in Tennessee, with the largest encompassing 3,500 ft^2. Twin Falls Hollow is also one of the highest quality locations for *X. tennesseensis*. The site contains G1 community (calcareous seeps).

Currently, TNC is under negotiations with the private landowner in order to acquire the 80-acre subwatershed of Twin Falls Hollow. Because the DNA lacks the flexibility in allowing the private landowner to retain hunting rights to the tract of land, TNC remains the primary negotiator in purchasing Twin Falls Hollow. Once TNC has obtained Twin Falls Hollow, then the primary goal will be to designate the site as a natural area in order to establish adequate levels of protection to the site.

Land Protection Needs – Devil's Backbone - 10,292 acres at an estimated cost of $16,438,000; Hickman County Cave - 918 acres at an estimated cost of $998,000; Langford Branch - 928 acres at an estimated cost of $1,003,000; Sandy Mitchell Hollow - 50 acres at an estimated cost of $55,000; Twin Falls Hollow - 24 acres at an estimated cost of $33,000.

Potential Partners – TDEC, NPS, TNC, TWRA, USFWS, TDEC, and Swan Conservation Trust.


Devil's Backbone Area
Hickman County Bat Cave
Natchez Trace Parkway
Devil's Backbone SNA
Devils Backbone State Park
Devil's Backbone
Sandy Mitchell Hollow
Langford Branch
Twin Falls Hollow
Hick Hill WMA
Little Grinders Creek
Hick Hill WMA
HICKMAN
LEWIS
LEWIS
MAURY
48
99
412
166
Piney Fork Creek
Muddy Branch
Rocky Branch
Indian Creek
Indian Creek
Cory Branch
Tatum Branch
Falls Branch
Dry Branch
Beech Branch
Sugg Branch
Loves Branch
Catheys Creek
Dobbins Branch
Lusk Branch
Hampshire Creek
Bell Branch
Dry Fork
Catheys Creek
Little Swan Creek
Black Branch
Briar Branch
Piney Branch
Anderson Branch
Kyzrell Branch
Flat Branch
Little Swan Creek
Webster Branch
Estes Branch
Baptist Branch
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

DRIPPING ROCK BLUFF SNA

Location – (N36.2106, W85.9203) This 67 acre site is located in Smith County approximately four miles southeast of the city of Carthage. (See Bridgewater Cave map)

Description - Located in the Central Basin, Dripping Rock Bluff is a NW-facing slope overlooking Boulton Bend on the Caney Fork River approximately 3 miles from its junction with the Cumberland River at Carthage. This bluff is actually the steep slope rising from 460 feet along the Caney Fork to nearly 1,000 feet at the top of the hill. Just above the Caney Fork River there is a sheer, dripping rock face, which rises about 10 feet above the river. On this wet rock ledge a large population of the rare sandwort, *Stellaria fontinalis* (state status: threatened), was discovered by University of Tennessee botanists in 1980.

The slope above this rock face is forested by a mixture of young hardwoods consisting primarily of oaks, ash, hickory, hackberry, and sugar maple. Parts of this hill have been pastured in the past but the slope above the dripping rock face is too steep for pasturing.

Significance – Site Importance High (B3) - Most of the known populations of *Stellaria fontinalis* are in perilous situations and no protected populations are known. This species is being proposed for federal listing and has been reported from Maury, Williamson, Davidson, and Cheatham counties in Tennessee and two Kentucky counties as well as this Smith County record. Within one half mile of this site is a limestone mining operation which does not appear to pose any immediate threat to Dripping Rock Bluff, but future limestone mining of this hill is conceivable. In addition, adjacent land is owned by the American Zinc Co. who may also own the limestone mining operation in the area.

Strategy - The strategy for acquisition at Dripping Rock Bluff Registered SNA is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 66.8 acres at an estimated cost of $100,200.

Potential Partners – USFWS and TDEC.

DRY BRANCH

Location – (N35.6022, W87.6411) Dry Branch is located in Lewis County in the Western Highland Rim Physiographic Province. It is located north of Hwy 412 and east of Brush Creek Road. (See Southwestern Highland Rim Project map)

Description – This site is in an area of steep dissected hills and contains both seeps and small clumps of vegetation growing in limestone edges and cracks along Dry Branch Creek and its tributaries. The seeps and other *Xyris tennesseensis* locations within the Dry Branch watershed are located within Streamside Management Zones (SMZs) and have not been significantly altered or impacted and retain their natural forest composition. However, much of the ridges and slopes are being converted to pine plantations. The seeps and other *X. tennesseensis* locations within the Dry Branch watershed cover about 2,600 acres.

Significance – Site Importance Outstanding (B1) – The focus of the site conservation plan for Dry Branch will be protection and management of populations of Tennessee yellow-eyed grass *(Xyris tennesseensis*) (G2). *X. tennesseensis* is a small herbaceous perennial known from only 15 sites in Tennessee, Georgia, and Alabama. Six sites in Lewis County represent the only extant occurrences of the plant in Tennessee. *X. tennesseensis* is rare throughout the United States with a state and federal status of endangered. Protection and conservation of this plant's very unique habitat is critical for its continued survival.

X. tennesseensis generally inhabits seep slopes, spring meadows, or the banks of small streams in open or thinly wooded, wet habitats with calcareous rocks often at or near the surface. At Little Grinders Creek, the plant was found growing in association most commonly with state listed large-leaved grass-of-parnassus (*Parnassia grandifolia)*. The surrounding tree canopy was dominated by various species of oak and hickory, particularly *Acer rubrum* and *Quercus alba*. Common associated herbs included *Amphicarpea bracteata, Juncus effusus*, *Parnassia grandifolia*, and *Rudbeckia fuligida.* Other less common associated herbs include *Carex spp*, *Cyperus spp, Impatiens sp*, *Juncus effusus, Oxypolis rigidior*, and *Phlox glaberrina*.

Strategy - The strategy for acquisition at Dry Branch is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation rare species and representative communities. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 1,117 acres at an estimated cost of $1,100,000.

Potential Partners – TDEC, TWRA, USFWS, TNC

DUCK RIVER HABITAT CORRIDOR AND STATE SCENIC RIVER

Location – (N35.5733, W86.9327) The Duck River project area includes a one-half mile buffer approximately seventy-three miles long along the Duck River in Marshall and Maury counties from the community of Williamsport upstream to Henry Horton State Park. The Tennessee Scenic Rivers Act designates a 450 feet corridor from the usual banks on either side of the river as a Class II Pastoral State Scenic River for 37 miles. This project includes the subprojects of Duck River Bluffs, Sowell Mill Glade, and Yanahli WMA.

Description - The Duck River begins in Coffee County and winds for 269 miles through eleven counties draining a watershed of 29,396 square miles (1,747,858 acres) before it empties into the Tennessee River. It is the longest flowing river in Tennessee and flows through forested and agricultural areas. The land adjoining the river has been extensively cleared in certain areas and supports a variety of agricultural uses, especially beef cattle production. The major urbanized areas along the Duck River are Manchester, Shelbyville, and Columbia.

The Duck River Habitat Corridor is the most biologically diverse watershed in the United States and is globally significant due to its extraordinary biological diversity. It supports the greatest diversification of freshwater mussels (55 taxa) in Tennessee including four endangered species: oyster mussel, tan rifleshell, birdwing pearly mussel, and the Cumberland monkeyface. To protect this important mussel resource, the entire river has been designated as a mussel sanctuary by TWRA, thereby prohibiting the commercial harvesting of mussels or disturbance of their habitat. Additionally, the river habitat supports a population of the endangered pygmy madtom. The TWRA has a restoration project underway to augment the population strengths of this species. It supports a significant sport fishery and is excellent habitat for smallmouth bass, rock bass, largemouth bass, and various species of catfish.

TWRA manages two properties along the Duck River. They are the 1,600 acre Williamsport WMA and the 12,800 acre Yanahli WMA. Both of these areas support a diverse avian community ranging from wetland-associated species to upland forest associated species. Yanahli has had 149 bird species documented as using this area and Williamsport 186 species. Of these; the yellow-billed cuckoo, red-headed woodpecker, eastern wood-peewee, blue-winged warbler, Louisiana waterthrush, Kentucky warbler, and field sparrow are designated as priority species by Partners In Flight and the Central Hardwoods Bird Conservation Region Implementation Plan.

The Duck State Scenic River is clearly one of the most biologically rich and diverse rivers in North America. Over 500 species of aquatic plants, fish and invertebrates have been documented in the section of the Duck River that has been designated as a State Scenic River alone, including 39 mussel and 84 fish species. Indeed, the Duck River itself contains more species of fish than all of Europe. The river is reported to support an amazing 140 different species of fish in its waters and 50 mussel species. Along its

journey the Duck River passes through several public lands, including Henry Horten State Park and Yanahli WMA.

For the recreational boater, the Duck River is characterized as a Class I River, meaning that there is moving water with a few riffles and small waves with few or no obstructions. These gentle and scenic characteristics contribute to the popularity of the Duck River for canoeing and fishing. Located nearby are several commercial canoe rental businesses and boat launching areas.

As an important water supply in the watershed, water quality in the Duck is also an important issue for a number of communities and provides a basis of mutual interest for developing long-term conservation strategies.

Duck River Bluffs (35.5883, W86.9800) **(**Site Importance Moderate - B3) is a 35 acre site located in Maury County. It is approximately 1.1 miles east of Mapleash Avenue on Sowell Mill Pike. Bluffs are on the south side of the road.

This old forest is composed of a mixture of oaks and hickories with chinquapin oak and shagbark hickory being among the dominant species. The dominant herbaceous plants include round-leaved ragwort, poison ivy, and Japanese honeysuckle.

Duck River Bluffs is one of only two known locations in Tennessee for the velvety cerastium (*Cerastium arvense var. velutinum*). This plant reaches the southern limit of its distribution at this location and ranges north through Missouri and Virginia to Idaho and Ontario. Because of its rarity in Tennessee the velvety cerastium is listed as state endangered. The state threatened water stitchwort (*Stellaria fontinalis*) also occurs at this site in isolated seeps along the south-facing bluff.

Sowell Mill Glade (N35.5919, W86.8964)(Site Importance High - B3) is a 224 acre site located in Maury County. The area is on Sowell Mill Pike just northeast of the I-65 overpass.

The site includes gravelly cedar glades and barrens. Rare elements include: *Talinum calcaricum* (state status: special concern), *Schoenolirion croceum* (state threatened), *Astragalus tennesseensis* (state status: special concern), *Dalea foliosa* (state and federally endangered, *Leavenworthia exigua* var. *exigua* (state status: special concern), and a rare Limestone glade community complex- Nashville basin Type (global rank G3). The site should be included in a macrosite design with the Duck River Complex Designated SNA.

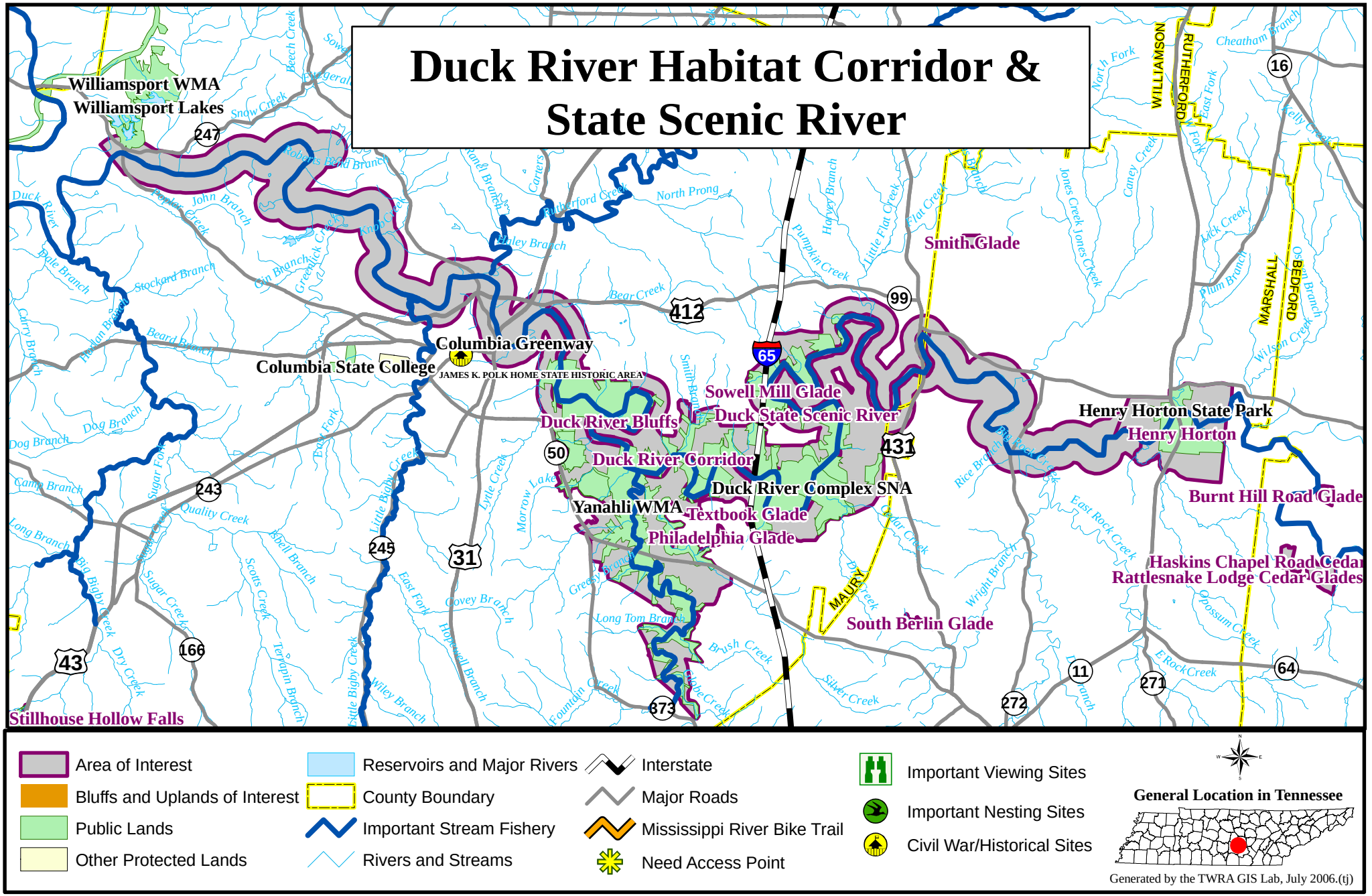
Yanahli WMA lies on both sides of the Duck River just east of the city of Columbia. Much of 12,800 acre area was originally purchased by TVA for the construction of a reservoir. However, various issues prevented the completion of the dam and the project was cancelled. The area is characterized as gently rolling farmland, upland oak/hickory forests and bottomland hardwoods, pasture and row crops. Bottomland forests cover 1,496 acres.

This area plays an important role in the protection of the watershed and riparian habitats along the river. This is critical to the preservation and enhancement of the habitats of this globally significant area. Additionally, it affords a tremendous amount of recreation including hunting, fishing, and wildlife watching.

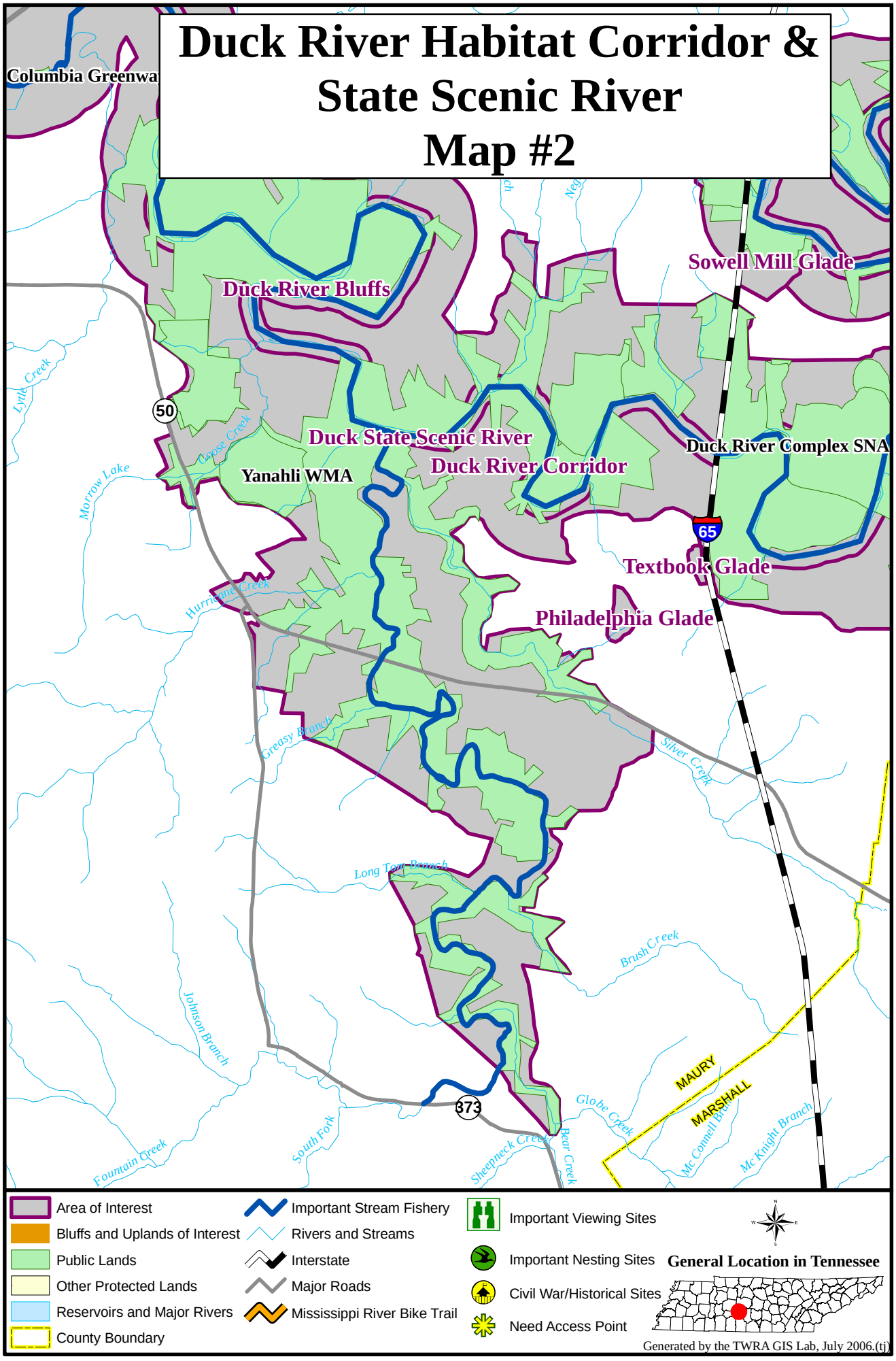
Strategy - Connecting contiguous protected areas to state and other publicly owned lands along the river are a major approach to making the Duck River a scenic greenway. Methods for conserving these areas are by fee title purchases, conservation easements, landowner assistance programs, and conservation buyers. Public and private partnerships are key to protecting and maintaining this relative unspoiled and biologically significant river. However, public ownership of the entire corridor is probably not practical.

Land Protection Needs – Habitat Corridor and Yanahli - 14,600 acres at an estimated cost of $19,500,000; Sowell Mill Glade - 224 acres at an estimated cost of $223,600; Duck River Bluffs - 35 acres at an estimated cost of $35,000; and Duck State Scenic River – 500 acres at an estimated cost of $750,000

Potential Partners - TNC and other foundations, private corporations, TWRA, TDEC, USFWS, TVA, county governments, and individual donors.


Duck River Habitat Corridor & State Scenic River
Williamsport WMA
Williamsport Lakes
Columbia Greenway
Columbia State College
JAMES K. POLK HOME STATE HISTORIC AREA
Smith Glade
Sowell Mill Glade
Duck River Bluffs
Duck State Scenic River
Duck River Corridor
Duck River Complex SNA
Yanahli WMA
Textbook Glade
Philadelphia Glade
South Berlin Glade
Henry Horton State Park
Henry Horton
Burnt Hill Road Glade
Haskins Chapel Road Cedar
Rattlesnake Lodge Cedar Glades
Stillhouse Hollow Falls
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

Duck River Habitat Corridor & State Scenic River Map #2



DUKE, WITTY, AND MCMAHAN CREEKS

Location – (N35.7007, W86.0218) Duke,Witty, and McMahan Creeks are located in Cannon and Warren Counties. The center of the site is approximately 14.5 miles west of McMinnville. The site includes the creeks and their immediate environs on both sides of Hwy. 53.

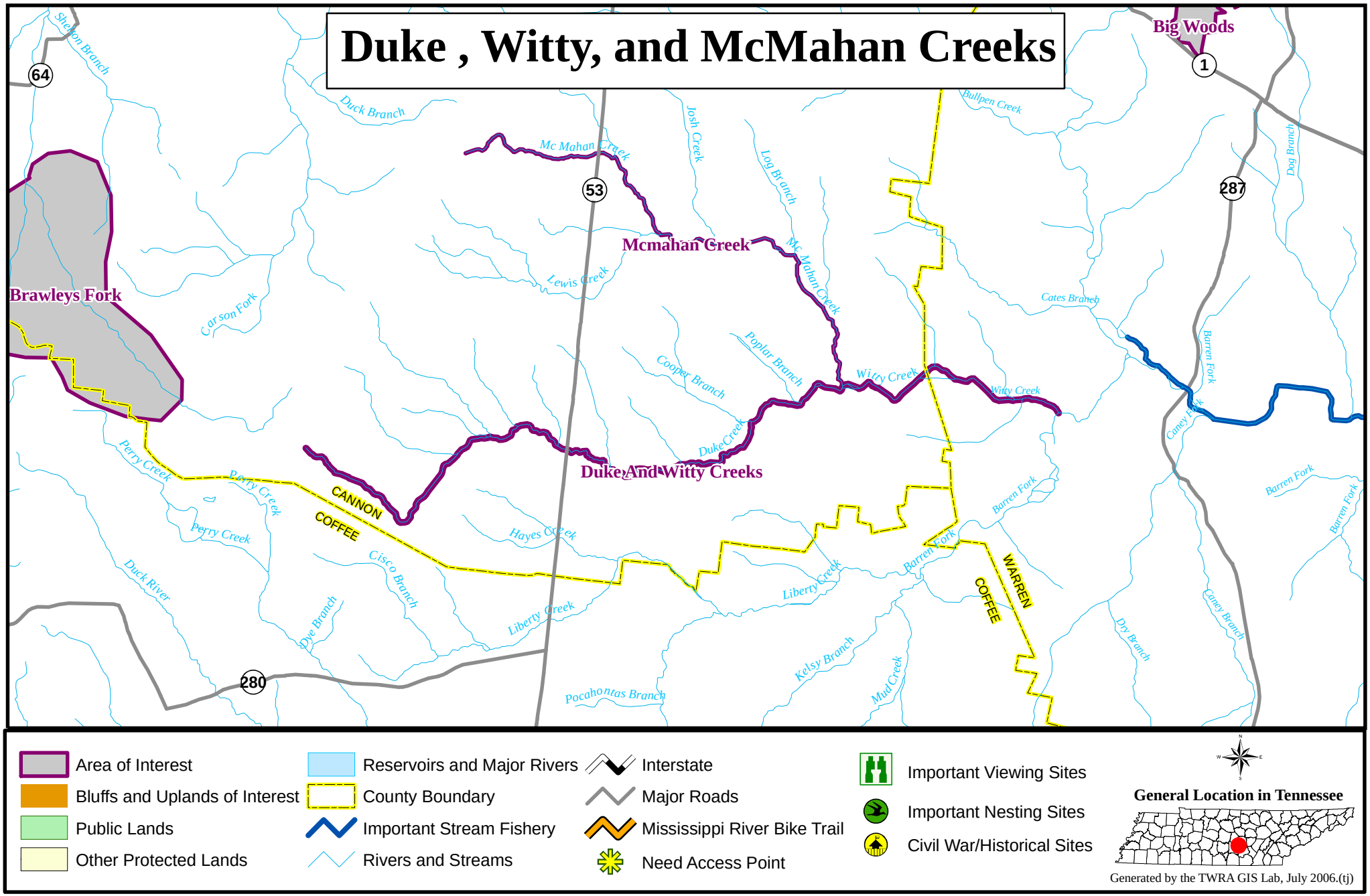
Description – Duke, Witty and McMahan Creeks are part of the Barren Fork of the Collins River watershed, and drain a portion of the barrens of the Eastern Highland Rim. Duke Creek begins approximately 10.8 miles south of Woodbury and flows east for approximately 7.7 miles, where it merges with McMahan Creek to form Witty Creek. Witty Creek flows east for another approximately two miles to its confluence with South Prong Barren Fork. The site is fed by two named tributaries and numerous unnamed streams and springs.

Significance – Site Importance Very High (B2) – These three creeks and their tributaries contain at least seven known populations of the Barrens topminnow (*Fundulus julisia*- state endangered), four populations of the Barrens darter (*Etheostoma forbesi*- state endangered), and four populations of the flame chub (*Hemitremia flammea*- in-need-of-management). It also includes at least one population of a rare plant, the wide-leaved yellow-eyed grass (*Xyris laxifolia* var *iridifolia*- state threatened).

Strategy – Habitat loss in the range of the Barrens topminnow is linked primarily to poor agricultural practices, alteration of natural water features, pesticide use, and diversion of flow for other purposes. Additionally, the topminnow is threatened by the introduction and spread of the western mosquitofish (*Gambusia affinis*). Protection of this and other barrens fishes requires restoration and maintenance of riparian buffers along streams, creation of alternate water sources for livestock, reduction or elimination of uncontrolled livestock stream crossings, and annual monitoring of core populations. Dye tracing should be used to determine water sources for spring resurgences, minimum flow requirements to support barrens fishes, and the extent of permissible maximum withdrawals from each aquifer. Recharge areas for spring sources must be protected to the maximum extent practicable.

Land Protection Needs – 2,024 acres at an estimated cost of $3,099,000. All streams in the area are potentially threatened by inappropriate livestock and agricultural practices. Protection of an estimated 1,174 acres will be required to provide a 50-meter buffer along these creeks and their tributaries. This may be accomplished through several measures, including livestock fencing, restoration of native trees along stream corridors, conservation easements, and fee simple acquisition of properties in the watershed.

Potential Partners – USFWS, TWRA, TNC, TDEC, and Conservation Fisheries, Inc.


Duke , Witty, and McMahan Creeks
Big Woods
Brawleys Fork
Mcmahan Creek
Duke And Witty Creeks
Sheldon Branch
Duck Branch
Mc Mahan Creek
Josh Creek
Log Branch
Bullpen Creek
Dog Branch
Lewis Creek
Carson Fork
Cooper Branch
Poplar Branch
Witty Creek
Cates Branch
Barren Fork
Caney Fork
Duke Creek
Perry Creek
CANNON
COFFEE
Hayes Creek
Cisco Branch
Duck River
Dye Branch
Liberty Creek
Kelsy Branch
Pocahontas Branch
Mud Creek
WARREN
Dry Branch
Caney Branch
64
53
287
1
280
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

DUNBAR CAVE SNA

Location – (N36.5532, W87.2987) Dunbar Cave SNA is located at 401 Old Dunbar Cave Road in the city of Clarksville in Montgomery County.

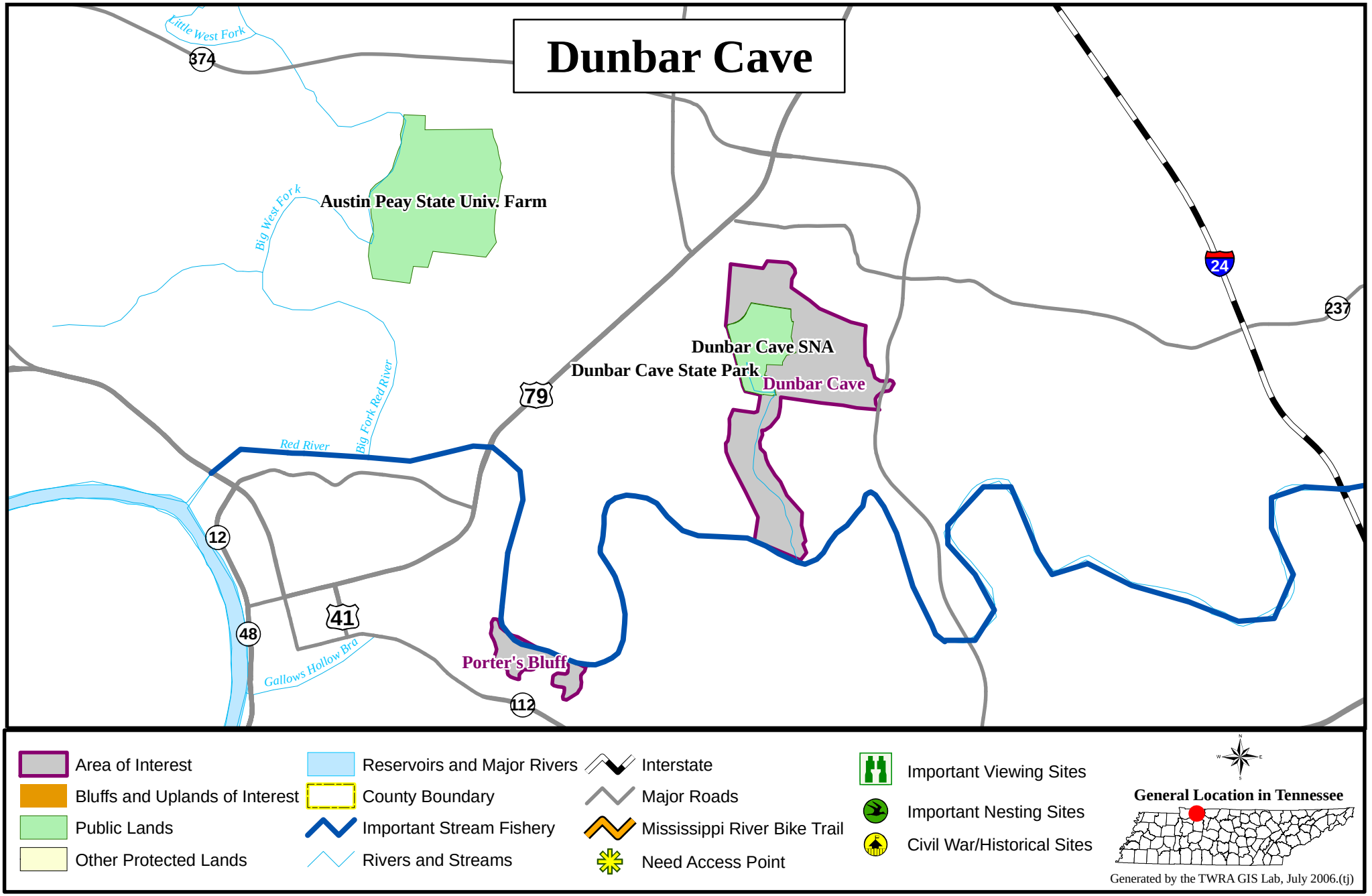
Description - Dunbar Cave SNA contains a 110 acre lake and Dunbar Cave. The park has a museum with picnicking and hiking trails and provides fishing opportunities. The park has an oak-hickory forest and the cave supports the unpigmented cave fish and crayfish, salamanders and bats. The cave has eight miles of mapped passageways and is the site of scientific investigation as well as guided tours.

Significance - The cave and its surroundings have considerable scenic, scientific and historical significance. The entrance offered shelter to prehistoric Native Americans as far back as 10,000 years. During the 19th and 20th centuries, Dunbar Cave was a popular mineral springs resort. In the 1930s it was associated with big band music and dances, with performances by such greats as Artie Shaw and Benny Goodman. In 1948, country music star Roy Acuff purchased the property and broadcasted a live country music show from the area. Dunbar Cave is one of the original designated SNAs.

Strategy - The strategy for future acquisitions for Dunbar SNA is to acquire properties surrounding the park that enhance the wildlife, aesthetics, interpretive and recreation mission of the park.

Land Protection Needs – 117 acres at an estimated cost of $275,000.

Potential Partners – TDEC, TCF, and other land conservancy groups.


Dunbar Cave
Little West Fork
374
Austin Peay State Univ. Farm
Big West Fork
Big Fork Red River
Red River
79
Dunbar Cave SNA
Dunbar Cave State Park
Dunbar Cave
24
237
12
41
48
Gallows Hollow Bra
Porter's Bluff
112
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

FLAT ROCK SNA

Location – (N35.8527, W86.2970) Flat Rock is located in Rutherford County on Factory Road approximately eight miles east of Murfreesboro.

Description - Located in the Central Basin, Flat Rock Cedar Glade and Barrens supports a mosaic of forest types, oak barrens, open grassland barrens, and cedar glades, including federal and state listed plant species and glade plant endemic species. These glades are characterized by exposed limestone that is typically interspersed with cedar-oak-hickory forest that occurs in deeper soils. This limestone, with its many sinkholes, is a karst topography commonly associated with glades.

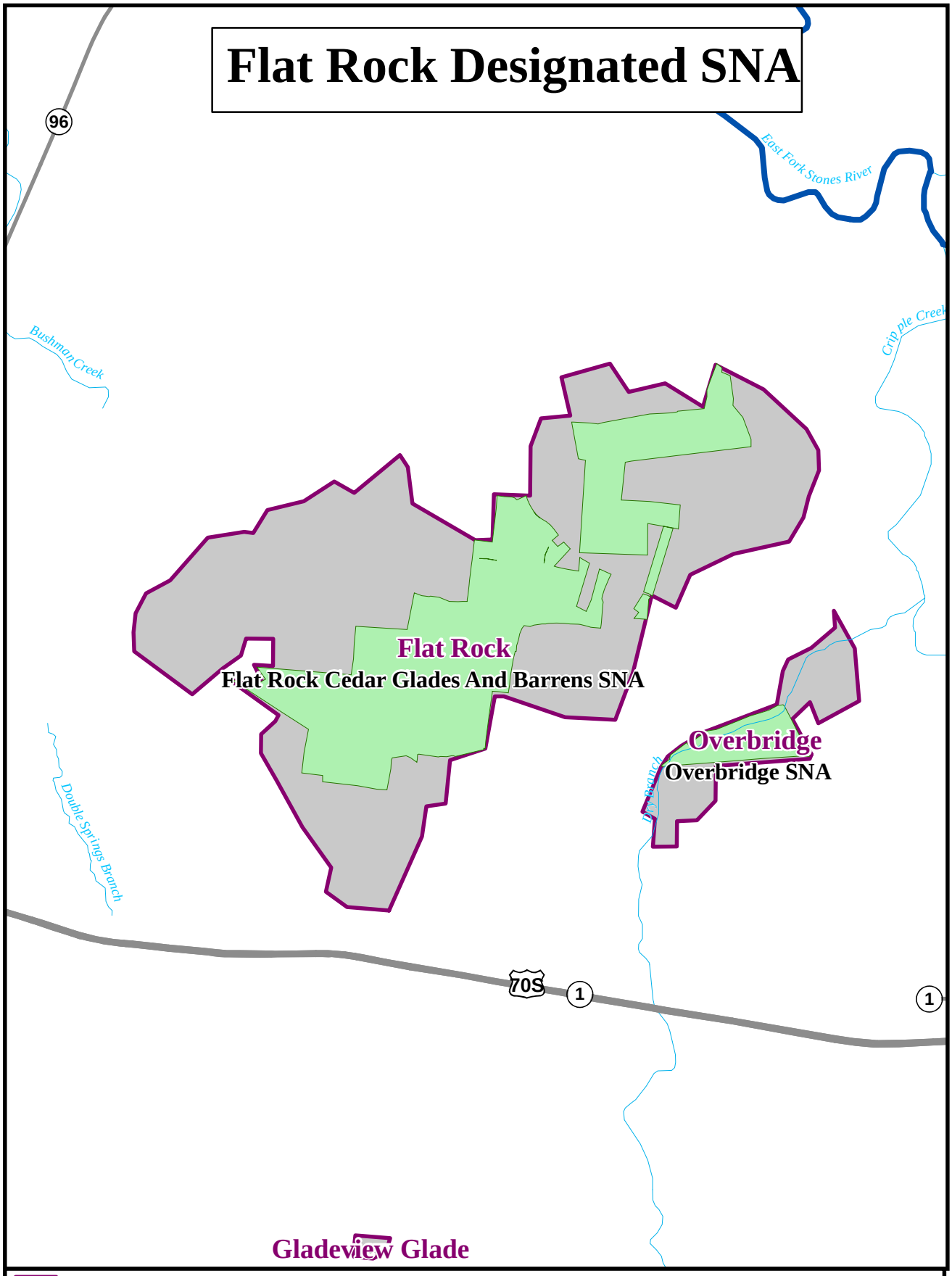
Significance – Site Importance Outstanding (B1) – Flat Rock Cedar Glades and Barrens support a diversity of annual grasses, including Sporobolus and Aristida. Rare plants associated with these cedar glades include Tennessee milk-vetch (*Astragalus tennesseensis*), Missouri primrose (*Oenothera missouriensis*), and limestone fame-flower (*Talinum calcaricum*). Small creek tributaries and flat gravelly wash areas provide specialized habitat for rare plants, including the federally endangered leafy prairie-clover (*Dalea foliosa*), the state listed yellow sunnybells (*Schoenolirion croceum*), low nutrush (*Scleria verticillata*), and Boykin's milkwort (*Polygala boykinii*). Little bluestem (*Schizachyrium scoparium*) and cedar trees occur in pockets of deep soil scattered across the glades. Open grassland barrens found in deeper soils are dominated by little bluestem and side-oats grama (*Bouteloua curtipendula*). Flat Rock barrens support numerous state listed species, including wavy-leaf purple coneflower (*Echinacea simulata*), southern prairie-dock (*Silphium pinnatifidum*) and slender blazing-star (*Liatris cylindracea*). These same species occur in the open canopy post oak forest areas referred to as an "oak barrens." Flat Rock is also significant as the type location for the federal listed Pyne's ground-plum (*Astragalus bibullatus*).

Strategy - The strategy for acquisition at Flat Rock is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 1,626 at an estimated cost of $3,502,000.

Potential Partners – TDEC, USFWS, and TNC

Flat Rock Designated SNA



Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary

Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail

Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
Need Access Point

General Location in Tennessee

Generated by the TWRA GIS Lab, July 2006.(tj)

FLINT RIVER BOTTOM SNA

Location – (N35.0456, W86.4311) The site is located in Lincoln County approximately one mile southwest of Flintville.

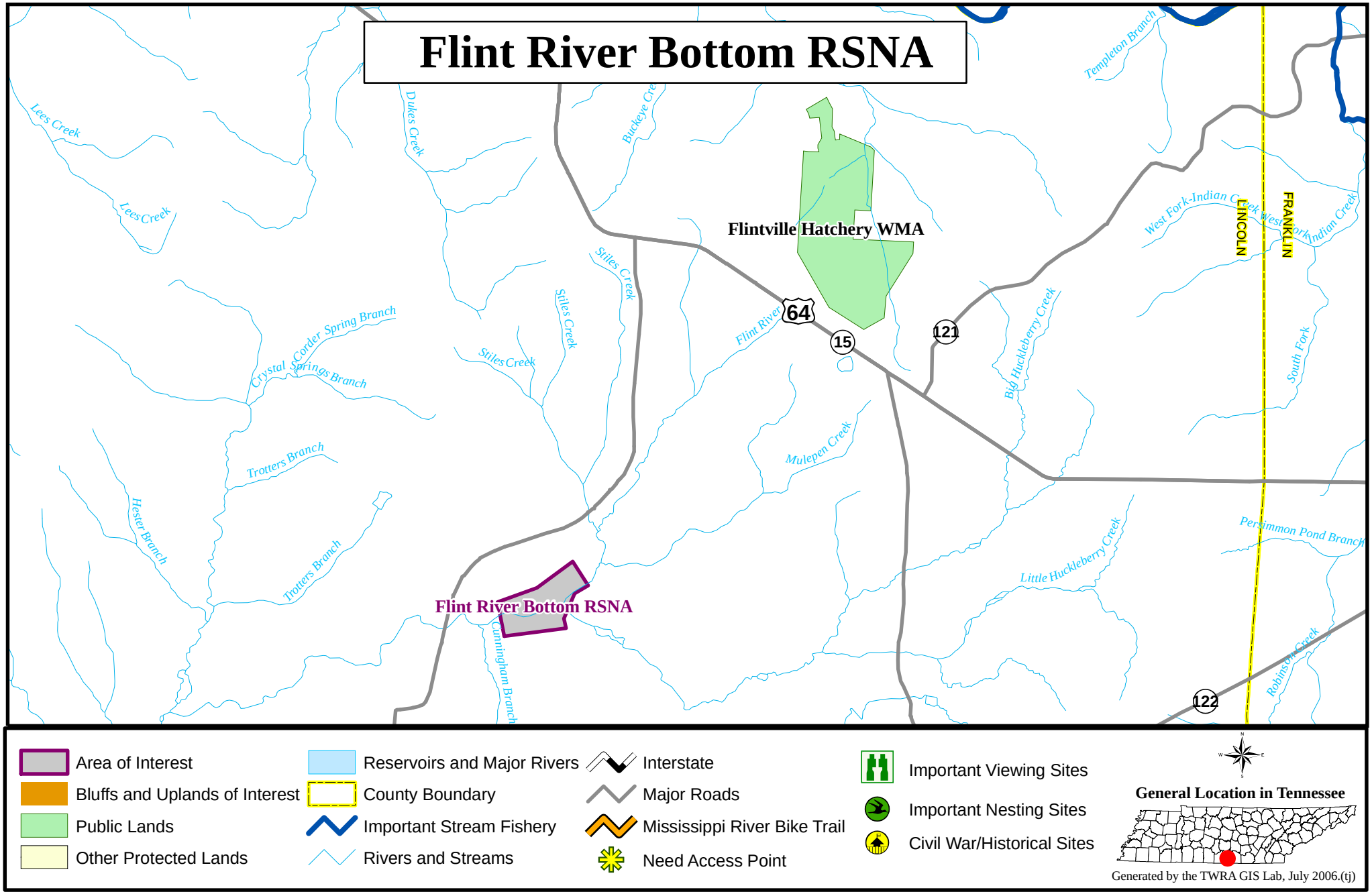
Description - Located on the Eastern Highland Rim, the site is about 179 acres of alluvial mixed bottomland hardwood forest.

Significance – Site Importance High (B3) - The site is a remnant of alluvial mixed bottomland hardwood forest. The Flint River is a small low gradient stream and the site contains a broad band of flat bottomland, which is subject to periodic flooding. The forests are mixed with at least 19 tree species present. Trees are mature and quite large. Understory is diverse and contains spicebush in a small tree form. Soils are well drained and well developed. There are some signs of selective timber harvests from the past. Herbaceous layer is thick and rich and contains a large population of the state endangered least trillium (*Trillium pusillum*).

Strategy - The strategy for acquisition at Flint River Bottom Registered SNA is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 179.5 acres at an estimated cost of $194,000.

Potential Partners – TDEC and TWRA.


Flint River Bottom RSNA
Flintville Hatchery WMA
Flint River Bottom RSNA
Lees Creek
Lees Creek
Dukes Creek
Buckeye Cre
Templeton Branch
Stiles Creek
Stiles Creek
Stiles Creek
Flint River
Crystal Corder Spring Branch
Crystal Springs Branch
Trotters Branch
Trotters Branch
Hester Branch
Mulepen Creek
Big Huckleberry Creek
West Fork-Indian Creek
West Fork-Indian Creek
South Fork
Persimmon Pond Branch
Little Huckleberry Creek
Robinson Creek
Cunningham Branch
64
15
121
122
LINCOLN
FRANKLIN
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
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Important Nesting Sites
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FOREST MILL POND

Location – Coffee County, Fredonia USGS quadrangle, 35.51990 N / 86.03290 W. The site is 3 miles from I-24 on both sides Highway 55 northeast of Manchester. (See Summitville Mountain Spring map)

Description of Property – This approximately 57 acre site is split on the south end by Highway 55 and is bounded on the north by additional forested lands. Agricultural lands are adjacent to the site on three sides. Sparse residential areas are scattered around the southern end. It is one of the few remaining examples of the oak barrens that once existed throughout the Eastern Highland Rim. The site is mostly flat and forested except for a small pond to the south. A small stream meanders through the northern portions and some small areas in the forest hold water long enough to exclude woody plant establishment. The forest is composed of willow oak, water oak, red maple, dogwood, black gum and sweet gum. The shrub layer in the forest consists mainly of buttonbush, elderberry, azalea and Virginia sweet spire. The pond edge supports a sphagnum moss and grass-sedge community which contains 3 rare plants. In 1985 Natural Heritage staff met with Department of Transportation staff and the result of the meeting was protection of this site from the widening of Highway 55. The commissioner of TDEC sent a letter to the commissioner of TDOT to commend them for their actions in protecting this site. Aerial photos from March of 1997 show that the site was still intact at that time and the forest is known to be intact at the present time.

Significance – At least 6 state listed plants occur here. The 6 plants known to occur here are Canby's lobelia (*Lobelia canbyi*), foxtail clubmoss (*Lycopodiella alopecuroides*), rose pogonia (*Pogonia ophioglossoides*), narrowleaf bushclover (*Lespedeza angustifolia*), yellow fringeless orchid (*Platanthera integra*) and blackfoot quillwort (*Isoetes melanopoda*). Historical records from the site indicate the presence of 3 additional state listed plants and they are Barratt's sedge (*Carex barrattii*), obscure beak-rush (*Rhynchospora perplexa*) and dwarf huckleberry (*Gaylusaccia dumosa*). One plant, yellow fringeless orchid, is extremely rare and critically imperiled in the state (S1) and is very rare and local throughout its range in the United States (G3). Six of these plant species are considered very rare and imperiled in the state (S2) but are more common in coastal plain states. The remaining 2 are rare and uncommon in the state (S3). A complete survey of this site would likely reveal other rare plants and at least 2 have been mentioned in reports. The surveyors could not positively identify the suspect plants at the time of their reports.

Strategy/Criteria - TWRA wetland acquisition funds could be applied. This site will need management to prevent succession around the pond to woody plants that would shade out the herbaceous plants.

Land protection needs – 57 acres at an estimated cost of $125,000.

Potential Partners – TWRA and TDEC.

GATTINGER'S GLADE AND BARRENS SNA

Location – (N36.0375, W86.3894) Gattinger's Glade and Barrens is located in Rutherford and Wilson Counties near Cedars of Lebanon State Forest. The property is privately owned and is not open to the public. Visitation is permitted by request only. (See Cedars of Lebanon map)

Description - Located on the Central Basin, Gattinger's Cedar Glade and Barrens is a 57-acre natural area that supports one of the largest and best-known populations of the federally endangered Tennessee purple coneflower (*Echinacea tennesseensis*). It was a property acquired as part of the Nashville Super Speedway development and its owners donated a conservation easement to the State for its protection. The State was able to secure funding through a grant from the USFWS to build a fence around its boundary for additional protection.

Significance – Site Importance Outstanding (B1) – Protecting this site through designation in 2003 was significant in the recovery and protection of this species. This was the largest colony of three colonies that comprise this major population. The State has successfully protected important colonies of four of five populations of all the known Tennessee coneflower populations. The fifth population occurs on private land and its seeds have been planted at suitable reintroduction sites in other SNAs where Tennessee coneflower populations do not occur.

This pristine glade and barrens complex also supports other state rare species that include cleft phlox (*Phlox bifida* ssp. *stellaria*), evovulus (*Evolvulus pilosus*), and Gattingers lobelia (*Lobelia appendiculata* var. *gattingeri*). It was named to honor Augustin Gattinger, who published the Flora of Tennessee in 1900, the only published flora to date. Gattinger described many cedar glades and barrens in the late 1800's that are presently protected as SNAs. He also was the first to describe Tennessee coneflower and provided location information for its occurrence.

Strategy - The strategy for acquisition at Gattinger's Glade and Barrens is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 325 acres at an estimated cost of $700,000.

Potential Partners – TDEC and USFWS.

GLADEVIEW BARRENS SNA AND GLADEVIEW GLADE

Location – (N35.8097, W86.3138) Gladeview Barrens and Gladeview Glade are 24 and 10 acres respectively and are located in Rutherford County approximately 12 miles west of Murfressboro south of Hwy 70. (See Manus Road Cedar Glade Designated SNA map)

Gladeview Barrens Registered SNA (Site Importance High - B3) is 24 acres of barrens/glades/and savanna – Rare elements include: *Helianthus occidentalis* (state status: special concern), *Astragalus tennesseensis* (state status: special concern), *Dalea purpurea* (state status: endangered), *Mirabilis albida* (state status: threatened), *Echinacea pallida* (state status: threatened), *Liatris cylindrica* (state status: threatened), *Dalea candida* (state status: special concern), *Solidago gattingeri* (state status: endangered), and *Evolvulus nuttallianus* (state status: special concern).

Gladeview Glade (Site Importance Moderate - B4) is 10 acres of open herbaceous dominated glade vegetation. This undeveloped cedar glade site is bordered by a junkyard. The site is noteworthy for numerous rare plant species. Rare elements include: *Anemone caroliniana* (state status: endangered), *Talinum calcaricum* (special concern), *Leavenworthii exigua* var. *exigua* (state status: special concern), *Evolvulus nuttallianus*, *Ammoselinum popei* (state status: threatened), and *Astragalus tennesseensis*.

Strategy – The strategy for acquisition at Gladeview sites is to acquire properties within and adjacent to the site design (site boundary and area between two sites) for access or access control, watershed protection, and preservation of rare species and representative communities of barrens/glade vegetation. Sites could be included in a macrosite design. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 34 acres at an estimated cost of $59,500.

Potential Partners - TDEC and USFWS.

GRASSY POND

Location – (N35.5232, W85.9886) Grassy Pond is located in Coffee County approximately 4 miles northeast of Manchester off Hwy 55. (See Summitville Mountain Spring map)

Description of the Property – This site is approximately 25 acres and is located on the Eastern Highland Rim. The pond is a maidencane-dominated marsh located in an upland depression on the Tennessee - Cumberland River divide, and is an open, shallow depression surrounded by mature second growth lowland forest consisting of red maple, blackgum, sweetgum and various oak species. The site was first documented in 1982 by Paul Somers, former DNA botanist.

Significance – (Site Importance High) The pond proper contains three state listed plant species: maidencane (*Panicum hemitomon*), obscure beak-rush (*Rhynchospora perplexa*), and wide-leaved yellow-eyed grass (*Xyris laxifolia* var. *iridifolia*). While these plants are more common along the Atlantic and Gulf Coastal Plains of the southeastern United States, all three of these plants are state listed and are considered very rare and imperiled (S2) in Tennessee and found in just a few counties in the southern portion of the Eastern Highland Rim.

Not only are some of the plant species rare, but the Interior Highland Rim Maidencane Pond plant community is considered extremely rare and critically imperiled globally (G1). This community is found in a restricted range and specific set of habitat conditions. Several other disjunct Coastal Plain species may occur in this plant community (see above). Without protection, this remaining example could be vulnerable to damage from off-road vehicles, local hydrologic changes, and land-use change (including housing development).

Additional rare and imperiled (S2) plant species occur outside of the pond proper: Virginia chainfern (*Woodwardia virginica*), foxtail clubmoss (*Lycopodium alopecuroides*), and blackfoot quillwort (*Isoetes melanopoda*). Foxtail clubmoss is only known from two counties in Tennessee. All six state-listed species, whether in the pond or in surrounding forest are classified as obligate wetland species.

Strategy – TWRA wetland acquisition funds could be applied. NRCS grassland reserve program may be a potential source of funding.

Land Protection Needs - 25.1 acres at an estimated cost of $35,000.

Potential Partners – TWRA, NRCS, TNC, and TDEC.

HARPETH STATE SCENIC RIVER AND CORRIDOR

Location – (N36.0767, W86.9809) The Harpeth State Scenic River begins near Highway 100 in southwest Davidson County and continues downstream to the Cheatham County Line, covering approximately 15 river miles. The watershed includes parts of Cheatham, Davidson, Dickson, Hickman, Rutherford and Williamson Counties and drains 872 square miles before flowing into the Cumberland River. Part of the Harpeth River is designated a State Scenic River because of its pastoral and developed river areas. Many other streams in the watershed are also popular for recreational boating because of their scenic qualities.

Description – The Harpeth Scenic River meanders though the central basin in southwest Davidson County. Exposed along parts of its course are 500 million year old limestone rocks of the Ordovician age. Its banks are surrounded by open fields, homes and some industrial development. The Bellevue Park, operated by Metro Parks, is on the floodplain of the river and provides recreational opportunities at the Red Caboose Playground, picnicking area, and a community center.

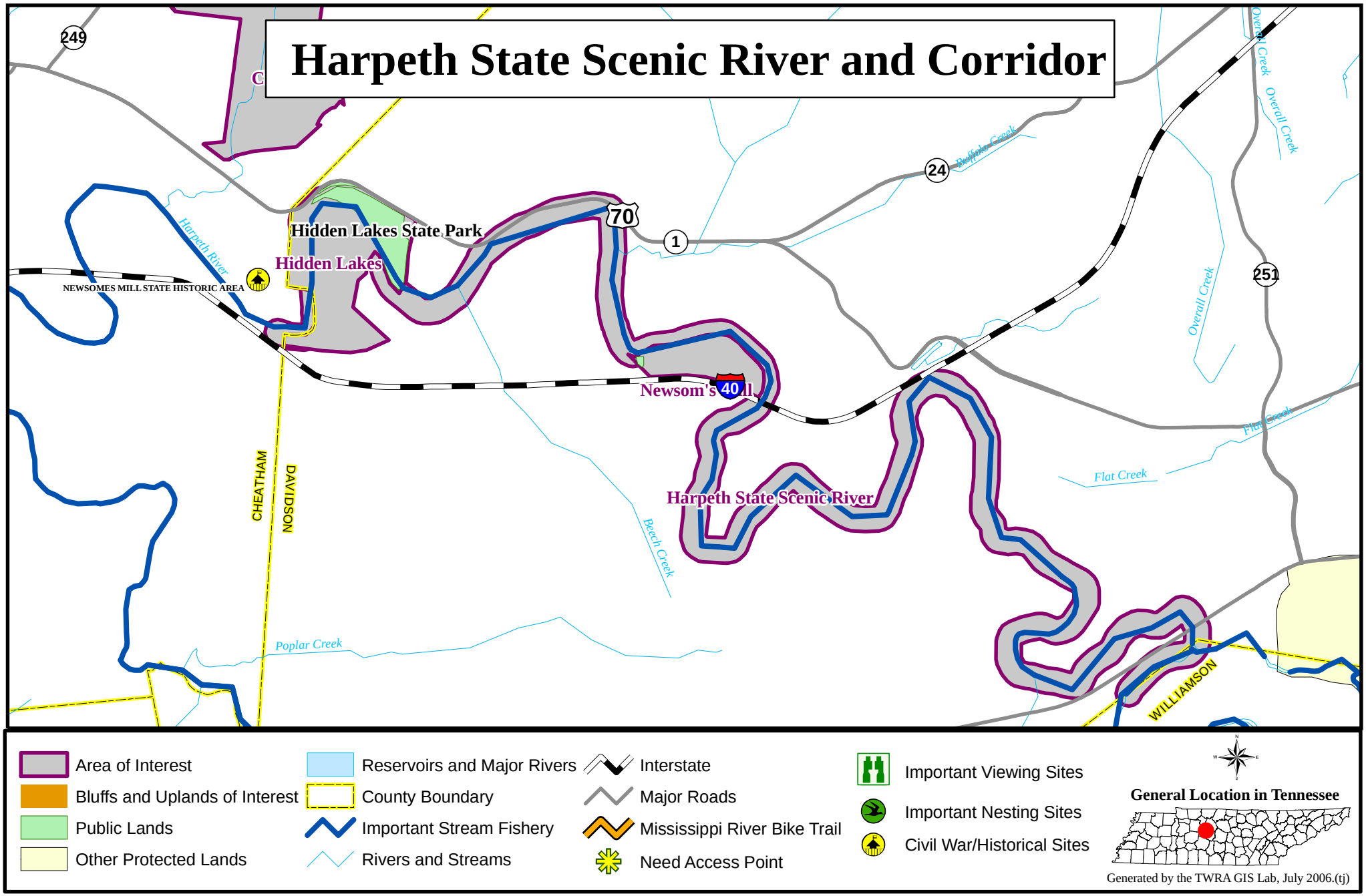
The Harpeth provides a pleasant canoeing experience when the water is up. Smallmouth and largemouth bass, as well as other game fish, can be found along this part of the river. The first segment of the river is designated as a class III Developed River Area. After passing under Interstate 40, it is designated as a Class II Pastoral River in Davidson County. The Scenic River portion is approximately 15 miles long with a drop in elevation of 40 feet.

Significance – Site Importance Very High (B2) – Within this section of the river are two fishes, the finescale darter and the slenderhead darter, which are listed as in-need-of-management. Also found in this section are the tan riffleshell which is listed as federally endangered, and the helmet rocksnail. Both of these mollusks were last observed here in the 1920s according to state records.

Strategy - The site conservation plan for the Harpeth State Scenic River identifies a corridor of no more than 450 feet from the usual banks on either side of the river. Additionally, located along the Harpeth State Scenic River are other conservation lands, public and private, that might include an area greater than that included within the Scenic River Boundary. These areas will be in addition to the conservation needs for the Scenic River. It may not be practical for the state or federal government to own and manage all of the lands within the scenic river corridor, however, through a public and private partnership involving innovative conservation approaches and private landowner incentives, it is hoped that the floodplain of the Harpeth River can be conserved.

Land Protection Needs – 500 acres (450 feet) at an estimated cost of $810,000.

Potential Partners – TDEC, TWRA, USFWS, TNC, Harpeth River Watershed Association, Tennessee Scenic Rivers Association, Land Trust for Tennessee, Davidson County Government.


Harpeth State Scenic River and Corridor
249
24
70
1
251
40
Hidden Lakes State Park
Hidden Lakes
NEWSOMES MILL STATE HISTORIC AREA
Harpeth River
Newsom's Mill
Harpeth State Scenic River
CHEATHAM
DAVIDSON
WILLIAMSON
Overall Creek
Buffalo Creek
Flat Creek
Beech Creek
Poplar Creek
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
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Important Nesting Sites
Civil War/Historical Sites
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HASKINS CHAPEL ROAD/RATTLESNAKE LODGE ROAD CEDAR GLADES

Location – (N35.5302, W86.6299) Haskins Chapel Road/Rattlesnake Lodge Road Cedar Glades site is located in Bedford County adjacent to the Duck River in the vicinity of the intersection of Haskins Chapel Road and Rattlesnake Lodge Road, about 5 miles SE of Henry Horton State Park. (See Duck River Habitat Corridor and State Scenic River map)

Description – The site encompasses approximately 600 acres. The area includes limestone gravel/bedrock glades with extensive exposed bedrock with large spaces in between giving a "checkerboard" appearance. There are several wet weather streams and barrens vegetation. There are some old fields and evidence of grazing in the past.

Significance – Biodiversity significance is High (B3) – There are five state listed species, *Arnoglossum plantagineum* (fen Indian plantain), *Schoenolirion croceum* (yellow sunnybells), *Talinum calcaricum* (Limestone fameflower), *Oenothera macrocarpa* (Missouri primrose), and *Astragalus tennesseensis* (Tennessee milk vetch). There are other glade species that are not state listed but are restricted to the cedar glade habitat, *Lobelia appendiculata* var. *gattingeri* (Gattinger's lobelia) *Leavenworthia stylosa* (glade-cress), *L. torulosa* (beaded glade-cress), and *Pediomelum subacaule* (Nashville breadroot). These species are globally ranked G3-G4. There is also the presence of a globally rare plant community type, a "wet calcareous meadow." Species associated with this community type include *Schoenolirion croceum*, *Eleocharis compressa*, *Nothoscordum bivalve*, *Carex craweii*, and *Scirpus cyperinus.*

Strategy – These two smaller sites have been combined into one large site design and the boundary needs to be delineated. There are numerous glades in the vicinity so the specific boundaries are precarious. Because of all the wet weather streams, there is potential habitat for leafy prairie clover (*Dalea foliosa*), a federally listed species, at this site; however, it has not been found.

The strategy for acquisition is to acquire properties within and adjacent to the site design (site boundary) for access or access control, for watershed protection, and for preservation of rare species and the rare plant community.

Land Protection Needs – 483 acres at an estimated cost of $810,000.

Potential Partners – TDEC, TNC, and TWRA.

HAWS SPRING FORK

Location – (N35.7598, W86.0821) Haws Spring Fork is located in Cannon County approximately 4 miles south of Woodbury.

Description - The main portion of the site is the Haws Spring Fork and surrounding stream banks. The stream is 7-10 feet wide and a bit wider downstream with most areas 4-6 inches deep. The water is cool and gently flowing with a gravel substrate. On the upstream portion of the site, the stream is spring fed. Upstream of the spring, the stream is ephemeral. Streamside habitats include pastures, roadsides with thickets and small forested tracts with black walnut, sycamore, and box elder. Near the spring and just beyond are two cave openings and the site also contains a small natural bridge.

Significance –Site Importance High (B3) – The endemic *Cambarus williami* (Brawley's Fork crayfish) occurs in this spring fed stream. The species was first collected at Brawley's Fork in 1971. It wasn't until 1995 that this species was described as new to science. Until 2000, *Cambarus williami* was only known from the type locality of Brawley's Fork, but surveys conducted by DNA biologists have extended the known range of the species. In 2001, the species was listed as state endangered and it is currently considered very rare and imperiled (G2). Even with additional surveys *C. williami* is not known to occur outside of the headwaters of the Stones River watershed and is limited to only two hydrologic units (East Fork Stones River and Brawley's Fork). To date, it does not occur on protected land.

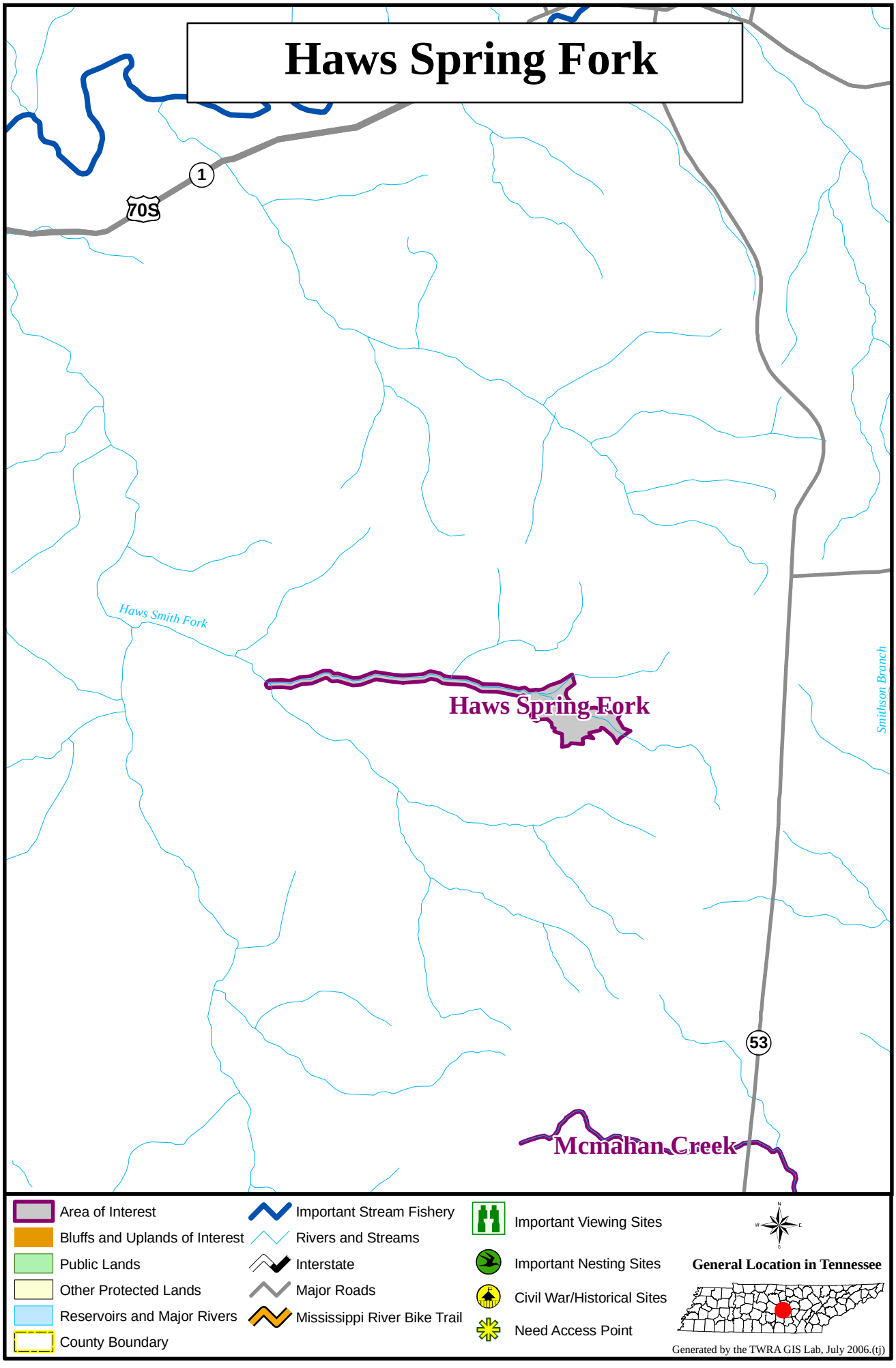
Juglans cinerea (butternut), a state-listed tree also occurs at the site. This species is declining range-wide due to a fungus which causes disease (*Sirococcus clavigignenti-juglandacearum*).

Strategy – Determine exact landowner(s) and see which tracts are available for purchase. If none are available, the DNA could pursue agreements with current landowners.

Land Protection Needs – 152 acres at an estimated cost of $166,000.

Potential Partners – TDEC and TWRA.

Haws Spring Fork



HAY HOLLOW

Location – (N35.8009, W87.1486) The approximately 2.5 acre site is located in Maury County approximately 1 mile north of the community of Fly on Dutch Potts Hollow Road on the west side of the road and Hill Branch.

Description - This site is located in the Western Highland Rim, which is a part of the Interior Low Plateau. The site is about 2.5 acres containing an oak forest with beech, hickory, and elm trees approximately 60-80 years of age. There are numerous limestone outcrops on the steep slopes above the road and Hill Branch, a tributary to Leipers Creek. The site nucleus is a small landslide area on the lower east-southeast facing slope just above the road. The landslide and road opening provide plenty of sunlight and the area is generally moist due to aspect and proximity to the stream. The road is unpaved graded chert.

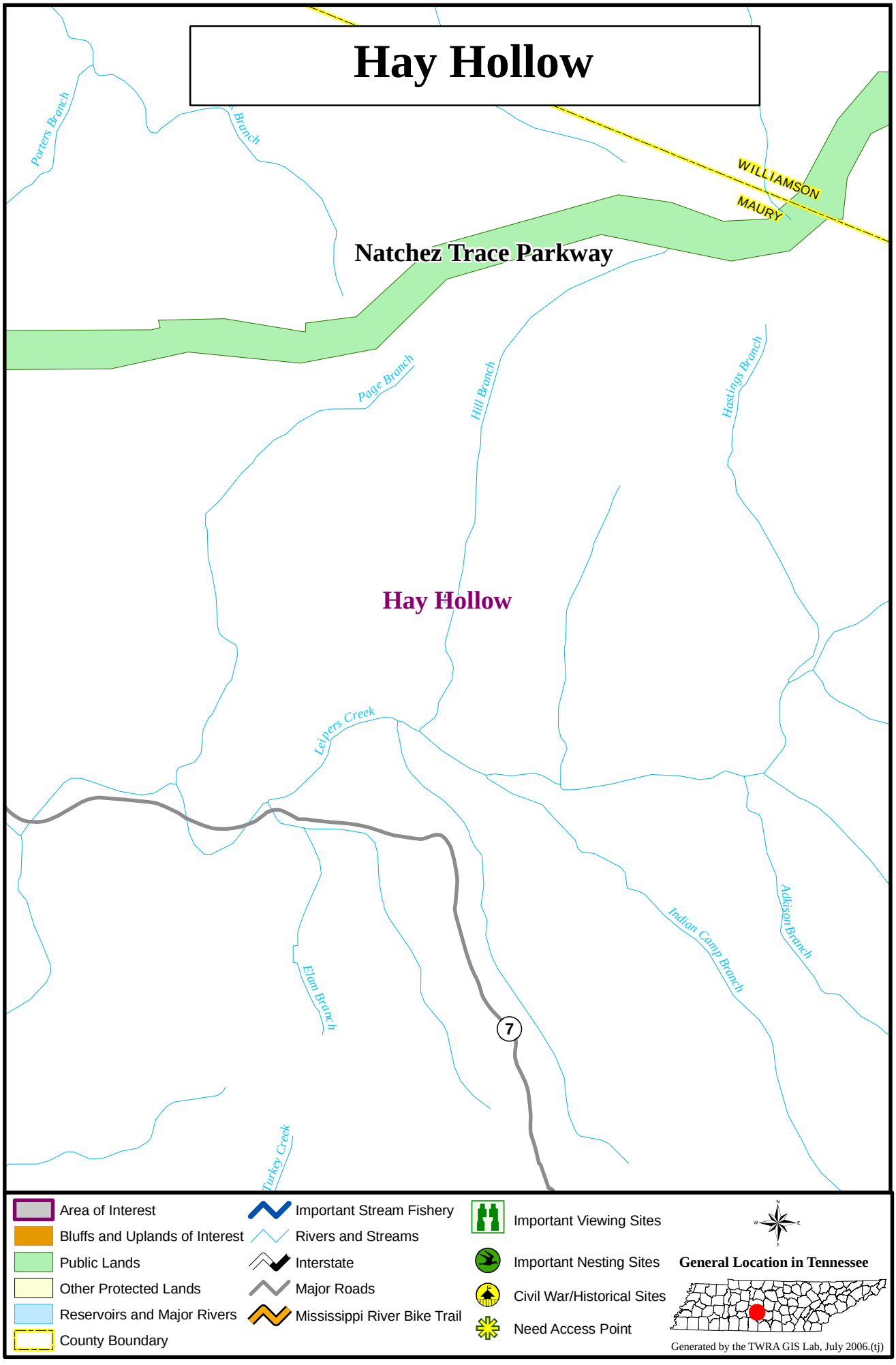
Significance – Site Importance Very High (B2) – *Apios priceana* (Price's potato-bean) is an herbaceous twining vine of the bean family. Price's potato-bean is listed as federally threatened and state endangered. The species is presently known from only 25 populations in four states: Alabama, Kentucky, Mississippi, and Tennessee. Price's potato-bean tends to occur on forested slopes and edges often with limestone outcrops adjacent to small streams and road right-of-ways. *A. priceana* plants of low to moderate vigor were observed in tree fall gaps and along a steep roadside bank on the west side of the creek about 150 yards south of the house. The plants appear to have the same distribution as 1999, and at least 12 vines were observed in 2004. *Lonicera japonica* and *Amphicarpea bracteata* were both common and could adversely affect the occurrence. It appeared that some downed trees had been cleared from the site in the recent past, resulting in some openings in the canopy. The plants were scattered along a 75 yard stretch of the roadside.

Strategy – DNA staff began contacting local county governments in 2004 informing each highway official about Price's potato-bean including the locations of each occurrence in the county. DNA staff then met with each county highway official at each respective county informing them further about the species, highlighting the importance of developing a cooperative management agreement, and taking each official to occurrences within the county. Visits emphasized the importance of appropriate management for the species. Where possible, roadside signs were placed on both ends of occurrences in 2005. The 6 in. x 8 in. metal signs read, "Do Not Mow or Spray." Plants that occur outside of the road right-of-way will require another form of protection such as acquisition or a conservation easement.

Land Protection Needs – 2.5 acre at an estimated cost of $9,000

Potential Partners – TDEC. Maury County government has agreed to voluntarily assist with management for the species along the right-of-way by limiting mowing and herbicide use during the growing season.

Hay Hollow


Porters Branch
WILLIAMSON
MAURY
Natchez Trace Parkway
Page Branch
Hill Branch
Hastings Branch
Hay Hollow
Leipers Creek
Indian Camp Branch
Adkison Branch
Elam Branch
7
Turkey Creek
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
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HENRY HORTON STATE PARK

Location – (N35.5877, W86.8000) Henry Horton is located 40 miles south of Nashville on Highway 31A between the towns of Chapel Hill and Lewisburg.

Description - Henry Horton State Park contains 1,140 acres and is situated on the banks of the Duck River. The park has an 18-hole golf course, inn and cabins with campground, swimming pool and picnic areas. The park also includes meeting rooms, hiking trails and a skeet and trap range.

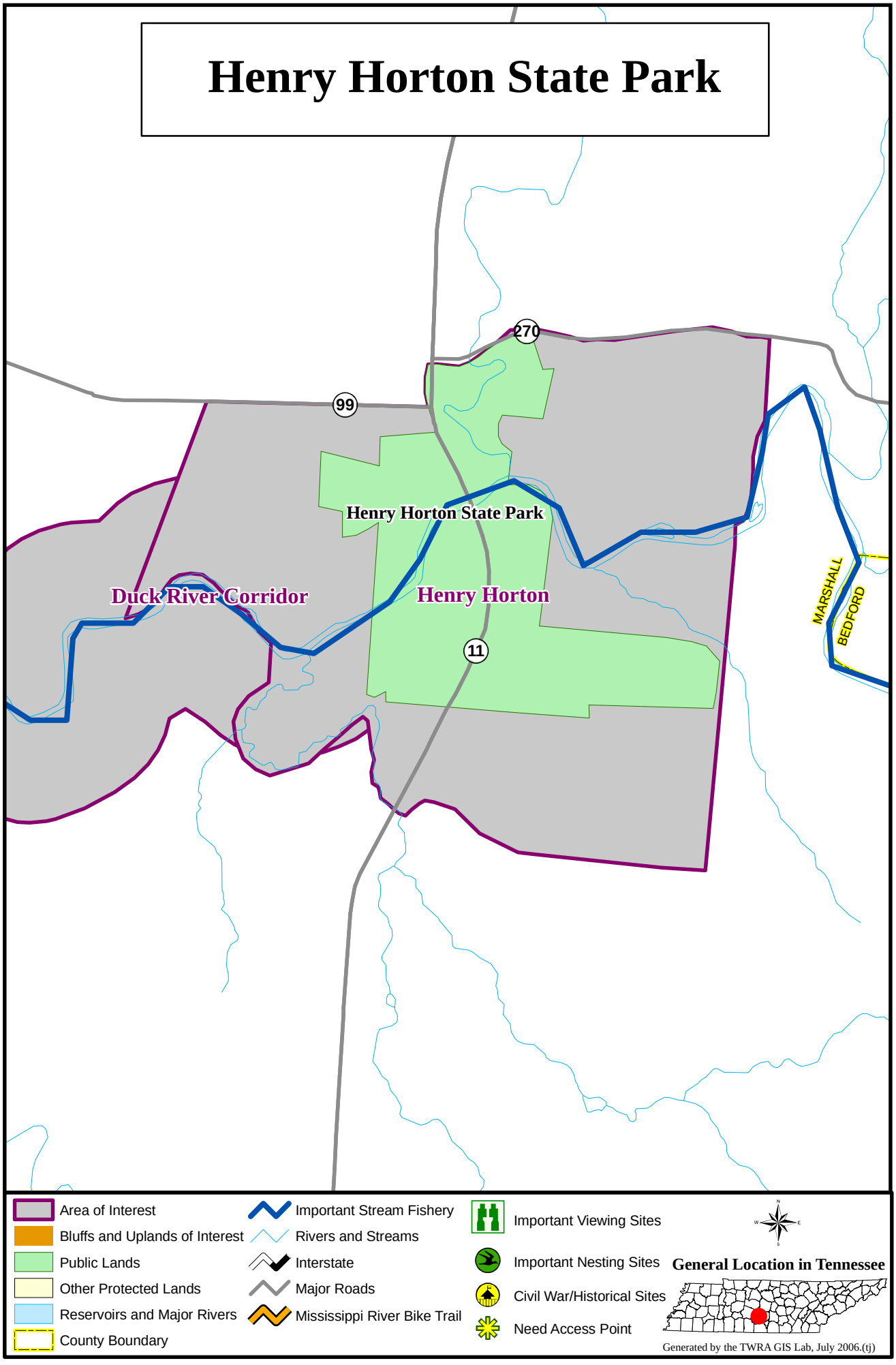
Significance - Henry Horton is well known for its championship 18 hole golf course and related facilities. The park has four hiking trails and a variety of wildlife and flora.

Strategy - The strategy for future acquisitions for Henry Horton State Park is to acquire properties surrounding the park that contain representative forest cover types of the Nashville basin and those lands that enhance the wildlife, aesthetics, interpretive and recreation mission of the park.

Land Protection Needs – 1,677 acres at an estimated cost of $4,400,000.

Potential Partners – TDEC, TCF and other land conservancy groups.

Henry Horton State Park



HERRON (HERRING) CAVE

Location – (N35.9453, W86.3049) Herron Cave is located in Rutherford County approximately one mile northwest of Lascassas, at the base of the south spur of Rucker Knob, just below the Valleyview Road, at an elevation of 600 feet." (Barr, 1961). (See Collins Trifolium Glade map)

Description – This cave occurs in Ridley limestone. According to Barr (1961): "Herring Cave is a rather long stream cave which trends north and west for 2,000 feet. The mouth opens in a breakdown. For 400 feet the stream flows over a bare rock floor, but beyond it is contained in a deep channel with overhanging ledges on either side. Beyond the deep channel the stream is wide and shallow. Toward the end of the cave it meanders in a trench in the silt fill. Several large solution cavities are developed along joints normal to the controlling joints of the cave passage." The total length of mapped passages is 4692 feet (Tennessee Cave Survey, 2003).

Significance – Site Importance Very High (B2) – Herron Cave is home to four state or federally listed species. These include the eastern woodrat (*Neotoma magister*), state in-need-of-management; southern cavefish (*Typhlichthys subterraneus*), state in-need of-management; Tennessee cave salamander (*Gyrinophilus palleucus*), state threatened; and the gray bat (*Myotis grisescens*), federally endangered. The gray bats use the cave either as summer or maternity roost, with numbers estimated between 1020 (Harvey, 2002) and 2763 (DNA, 1997). Trapping conducted during the summer of 2005 revealed several lactating or post-lactating females, indicating probable use as a maternity roost (Lamb, 2005). With the presence of woodrats and gray bats, the cave likely supports a diverse assemblage of cave-obligate invertebrates, many of which are extremely rare and narrowly endemic to the region.

Strategy – In 1995 a bat-friendly gate was installed inside the mouth of Herron Cave to limit access by potential vandals. Use of the cave as a maternity roost by gray bats requires that this gate be open during the spring and summer, as pregnant females will not normally pass through a closed gate of this design. To promote appropriate management and conservation of this cave, in 1995 a Memorandum of Understanding was enacted between the landowner, TNC, TWRA, USFWS, TDEC, and Lincoln Memorial University. The DNA and TNC have jointly ensured that the cave gate is open for bat passage during the proper time of year.

The current landowner is conservation-minded and is aware of the needs of the listed species using Herron Cave. Access to the cave is by permission only, and is restricted to times that the cave is not in use by gray bats. However, the current landowner does not control the recharge area of the cave, and that needs to be addressed by protection of the core acreage draining to the cave and an appropriate buffer around the mouth.

Land Protection Needs – 300 acres at an estimated cost of $490,000.

Potential Partners – TNC, TDEC, and TWRA

HILL CREEK AND CAVE

Location – (N35.8009, W86.0344) Hill Creek and Cave is located in Cannon County west of Woodbury off Hwy 70 (See Short Mountain Designated SNA and Short Mountain Sanctuary RSNA map)

Description - The stream is cave spring fed, cool, and gravel-bottomed with low to moderate amounts of silt which is visible when the rocks are moved. The stream is 15-20 feet wide and 3-10 inches deep with some pools over 36 inches. The site design includes the small watershed around the cave and approximately 130 foot buffer of the stream. Away from the cave, the stream banks are surrounded by hayfields, but the banks are forested and the stream is shaded by such trees as sycamore and box elder. The area around the cave is most scenic and contains a large concentration of large musclewood trees and the forested slopes contain beech trees. The cave has water at the mouth and the stream is then dry for approximately 60 feet. Water again appears and forms a deep pool with continuous flow downstream. The entrance to Hill Creek Cave proper is 8 feet wide and 3 feet high.

Significance – Site Importance High (B3) – The endemic *Cambarus williami* (Brawley's Fork crayfish) occurs in this spring fed stream. The species was first collected at Brawley's Fork in 1971. It wasn't until 1995 that species was described as new to science. Until 2000, *C. williami* was only known from the type locality of Brawley's Fork, but surveys conducted by DNA biologists have extended the known range of the species. In 2001, the species was listed as state endangered and it is currently considered very rare and imperiled (G2). Even with additional surveys *C. williami* is not known to occur outside of the headwaters of the Stones River watershed and is limited to only two 14-digit hydrologic units (East Fork Stones River and Brawley's Fork). To date, it does not occur on protected land.

Strategy – Determine exact landowner(s) and see which tracts are available for purchase. If no lands are for sale, the DNA could pursue agreements with current landowners.

Land Protection Needs – 21 acres at an estimated cost of $25,000.

Potential Partners – TDEC and TWRA.

LANE FARM

Location – (N36.0317, W86.3714) The Lane Farm site is located in Wilson County within the Central Basin Physiographic Province. The Lane Farm is near the Vine community and is located just west of Highway 231 approximately 13 miles from the cities of Murfreesboro and Lebanon, and just north of Hwy 452. (See Cedars of Lebanon map)

Description - The Lane Farm site consists of a privately owned farm and surrounding adjacent tracts in Wilson County, Tennessee. There is a house and barn located on the Lane Farm property north of the glades and barrens near Fall Creek Road. The site consists of extensive gravel glades and barrens intermixed with cedar-hardwood forest, old-field communities and pastures. A dry wash runs through the center of the site. The farm was previously used for cattle production, and had been mowed/bush-hogged in the past, a practice that may have benefited the rare plant species. This site has been a privately held Registered SNA since 1993.

Significance – Site Importance Very High (B1) – This site contains significant populations of two federally listed plant species, leafy prairie clover (*Dalea foliosa*)(G2/G3) and Tennessee coneflower (*Echinacea tennesseensis*)(G2), as well as numerous other state listed species and high quality rare communities. At least seven other state listed plant species are present, including: evolvulus (*Evolvulus nuttallianus)*, Tennessee milk-vetch (*Astragalus tennesseensis)*, Pope's sand parsley (*Ammoselinum popei)*, pale umbrella-wort (*Mirabilis albida)*, Missouri primrose (*Oenothera macrocarpa)*, glade cleft phlox (*Phlox bifida* ssp. *Stellaria)*, and limestone fame-flower (*Talinum calcaricum)*.

The leafy prairie-clover is located along the dry wash and barrens that runs through the center of the site, and at the time of this report is the highest ranked privately owned population of this species in the state. Tennessee coneflower is extremely abundant on the property on the slightly higher gravel glades on each side of the wash. The coneflower population has been given a rank of B and is the last remaining large population (colony) on privately owned land in the state. It is also one of the three largest known populations, and the only one of those three populations that is not protected. Protection of this colony is critical to meet recovery goals.

Strategy – Acquisition of habitat to perpetually protect and conserve one population of Tennessee coneflower and one population of leafy prairie-clover for the purposes of recovery. Funds are needed for costs associated with the acquisition of private property by the State to assure the protection of these significant populations. Once acquired, the property will be proposed for designation as a SNA, thereby further ensuring its long-term protection and stewardship

Land Protection Needs – 715 acres at an estimated cost of $1,890,500.

Potential Partners – TDEC, USFWS, and TWRA.

LEWIS STATE FOREST

Location – (N35.5001, W87.5946) Lewis State Forest is located on Hwy 48 just southwest of Hohenwald on the Western Highland Rim.

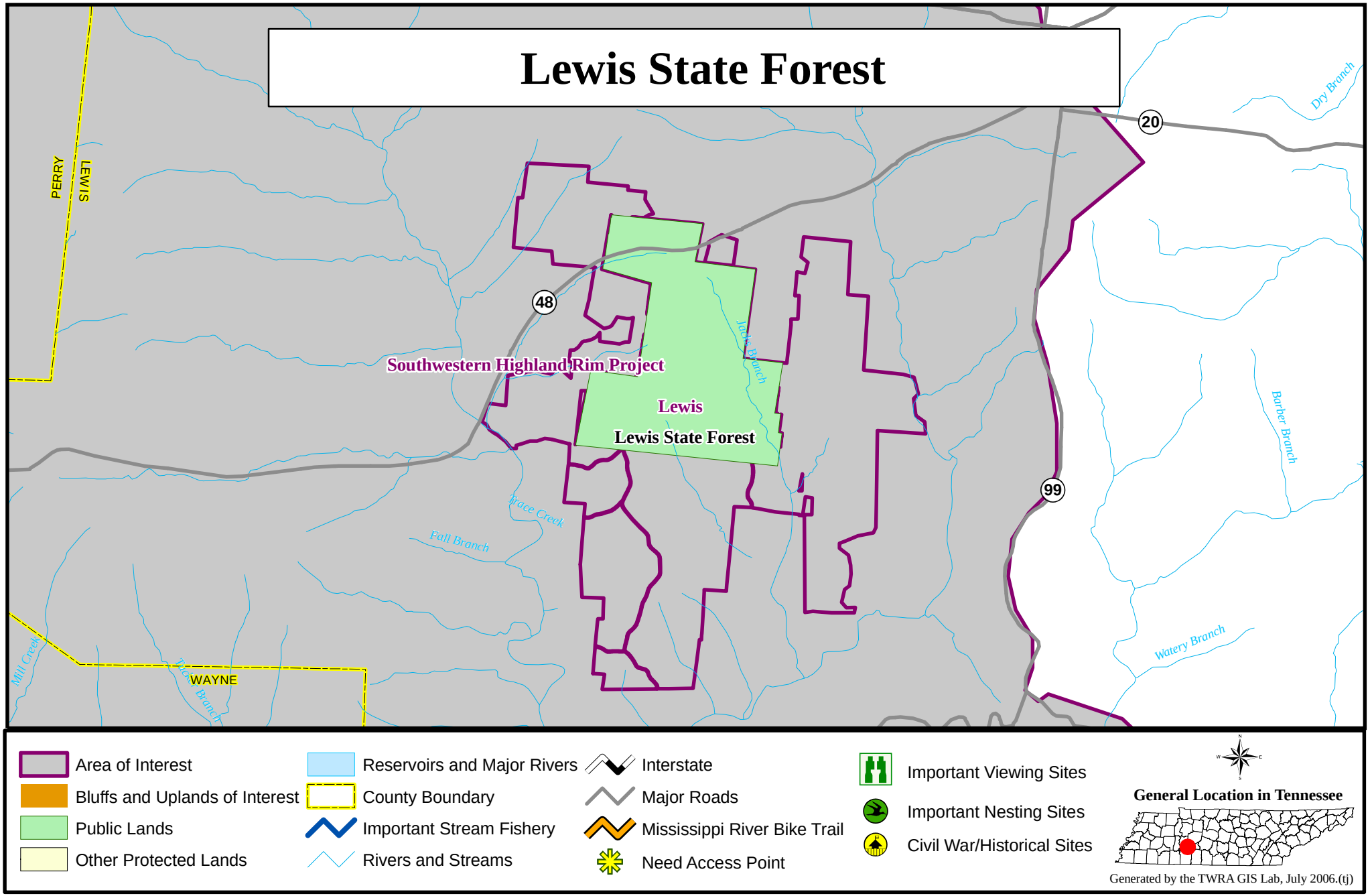
Description - (1,257 acres) This area was purchased from the Chancery Court of Lewis County for delinquent taxes in 1933 and became a State Forest in 1936. Most of the land (1,215 acres) is in forest cover and the remainder is open land. This Forest is somewhat unique in the TSF system in that it contains about 17% southern yellow pine types. Primary use of the Forest is for hunting and forestry demonstrations.

Significance – Lewis contains a variety of upland forest types.

Strategy - Lewis is a small forest and needs to be expanded to better accommodate management for multiple uses on a consistent basis. Forest access and access control and inholdings are the primary criteria for acquisitions. Increasing the forest size is a long-term goal.

Land Protection Needs – 3,233 acres at an estimated cost of $1,845,200.

Potential Partners – Unknown.


Lewis State Forest
PERRY
LEWIS
WAYNE
20
48
99
Dry Branch
Jacks Branch
Barber Branch
Trace Creek
Fall Branch
Mill Creek
Watery Branch
Southwestern Highland Rim Project
Lewis
Lewis State Forest
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

LINCOLN COUNTY BAT CAVE

Location – (N35.1309, W86.5074) Lincoln County Bat Cave is located in Lincoln County on the south bank of the Elk River, at mile 95.5, on Lucinda Bend. The mouth of the cave is 100 yards upstream from an island, 20 feet above the river, near the base of a 100-foot bluff, at an elevation of 670 feet (Barr, 1961).

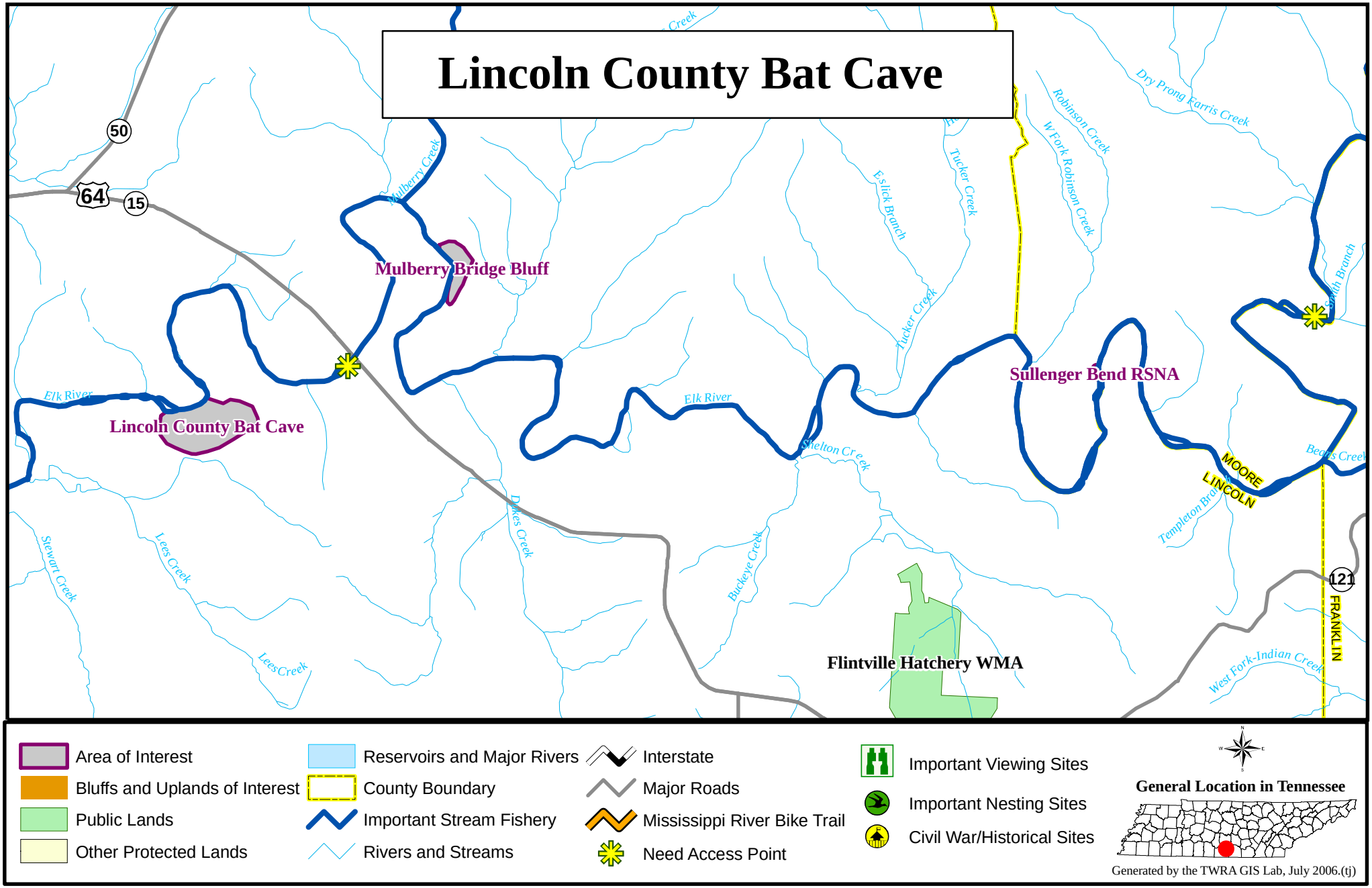
Description – This cave occurs in Bigby-Cannon limestone. According to Barr (1961): "Bat Cave, the largest and longest known cave in Lincoln County, is so named because a large colony of bats (mostly *Myotis sodalis)* inhabits the cave in the summer months. The entrance is 6 feet high and 20 feet wide and is located 50 feet south of Elk River. The cave extends S. 60° W. for 175 feet, then S. 10°-15° W. for 420 feet. A sizable stream flows through this part of the cave; the depth of the water varies from 6 inches to 4.5 feet. At 595 feet the stream flows from a narrow slot into a large pool. The side passage is 335 feet (or more) long and extends southwestward. The last 145 feet of the cave explored by the writer is a low water passage, apparently of phreatic origin. It is half filled with water. The main stream passage averages 15 feet wide and 6 feet high. For part of its length there is a narrow slot in the roof, formed by solution along a joint. The side passage averages 6 feet wide and 10 feet high in the pothole area but gradually becomes smaller upstream. Very few formations are developed in the cave." The total length of mapped passages is 1,010 feet (Tennessee Cave Survey, 2003).

Significance – Site Importance High (B3) – Lincoln County Bat Cave is home to a large summer roost of the state and federally endangered gray bat (*Myotis grisescens*). This species is considered imperiled by the DNA (G3S2). A population of 17,340 gray bats was reported at this location in the summer of 2002 (Harvey, 2002), and is believed to represent a bachelor colony. The summertime report of the Indiana bat (*Myotis sodalis*) is believed to be erroneous. Because of the presence of the large gray bat colony, the cave likely supports a diverse assemblage of cave-obligate invertebrates, many of which are extremely rare and narrowly endemic to the region. Additionally, a small population of the state threatened Alabama snow-wreath (*Neviusia alabamensis*) occurs approximately 0.15 miles east of the cave, and is included in the site design.

Strategy – The primary concern for the conservation of the gray bat is uncontrolled access. Disturbance of gray bats during roosting periods can significantly reduce colony size, and ultimately drive them away. In addition to protecting an initial one acre around the entrance of the cave, the cave may need to be posted to discourage inappropriate access. Other exclusion measures may be necessary. Acquisition of additional acreage will provide for establishment of a forested corridor from the entrance along the Elk River, over which the bats may be expected to feed. Ideally, the entire recharge area of the cave will be acquired to protect it from incompatible land uses.

Land Protection Needs – 221 acres at an estimated cost of $239,000.

Potential Partners – TNC, TWRA, USFWS, and TDEC.


Lincoln County Bat Cave
50
64
15
Mulberry Creek
Mulberry Bridge Bluff
Elk River
Lincoln County Bat Cave
Eslick Branch
Tucker Creek
Robinson Creek
W Fork Robinson Creek
Dry Prong Farris Creek
South Branch
Sullenger Bend RSNA
Elk River
Shelton Creek
Dykes Creek
Buckeye Creek
Stewart Creek
Lees Creek
Lees Creek
MOORE
LINCOLN
Templeton Branch
Beans Creek
121
FRANKLIN
Flintville Hatchery WMA
West Fork-Indian Creek
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

LITTLE GRINDERS CREEK (HICK HILL WMA) & AUNTNEY HOLLOW SNA

Location – (N35.5376, W87.4095 and N35.5198, W87.4294, respectively) Little Grinders Creek is located in Lewis County within the Western Highland Rim Physiographic Province. It is located south of Hwy 412, and east of the Natchez Trace Parkway. Auntney Hollow is located to the south of Little Grinders Creek. At the time of this report, approximately 2,100 acres of Dry Branch had been acquired for transfer to TDEC for management as a SNA.

Little Grinders Creek – Site Importance Outstanding (B1) – This site is in an area of steep dissected hills and is predominantly forested. The site consists of seeps along the headwaters of Little Grinders Creek and its tributaries**.** At the time of this report, this site was owned and managed by an industrial forestland company. The seeps and other Tennessee yellow-eyed grass (*Xyris tennesseensis)* locations within the Little Grinders Creek watershed are located within SMZs and have not been significantly altered or impacted and retain their natural forest composition, however, much of the ridges and slopes have been converted to pine plantations by the previous owners. The site is located at the confluence of Mail Hollow, Tanyard Hollow, and Little Grinders Creek at the 900 ft. elevation contour.

The focus of the site conservation plan for Little Grinders Creek will be protection and management of populations of Tennessee yellow-eyed grass (*X. tennesseensis)* (G2) and associated rare seep communities. This site has one of the largest and best populations of the federally and state endangered *X. tennesseensis* in the state. The state threatened Eggert's sunflower (*Helianthus eggertii*) also occurs in several places within the site. *X. tennesseensis* is a small herbaceous perennial known from only 15 sites in Tennessee, Georgia, and Alabama. Six sites in Lewis County represent the only extant occurrences of the plant in Tennessee. *X. tennesseensis* is rare throughout the U.S. with a federal status of endangered. Protection and conservation of this plant's very unique habitat is critical for its continued survival.

X. tennesseensis generally inhabits seep slopes, spring meadows, or the banks of small streams in open or thinly wooded, wet habitats with calcareous rocks often at or near the surface. At this site the plant was found growing in association most commonly with *Parnassia grandifolia*. The surrounding tree canopy was dominated by various species of oak, maple, and hickory, particularly red maple and white oak. Common associated herbs included *Amphicarpea bracteata, Juncus effusus*, *Parnassia grandifolia*, and *Rudbeckia fuligida.* Other less common associated herbs include *Carex spp*, *Cyperus spp, Impatiens sp*, *Juncus effusus, Oxypolis rigidior*, and *Phlox glaberrina*. *P. grandifolia* is listed as a species of concern in Tennessee.

Auntney Hollow Designated SNA. (Site Importance High - B3) contains a Xyris seep. The Xyris seep occurs in a semi-open condition with willow, swamp dogwood (*Cornus amomum*) and alder growing along the seep's margin. The surrounding area is a closed

canopy oak-hickory forest. This seep plant community also includes black-eyed Susan, cowbane, marsh fern, bull-rush, goldenrod, phlox, rattlebox, flat sedge, beak rush, and short-headed rush.

Auntney Hollow is significant because it also supports a rare *X. tennesseensis* seep community. This small seep is less than one tenth of acre and is located at the base of a west-facing slope near a tributary of Little Swan Creek. The size and shape of the natural area was established based on drainage patterns to eliminate potential damage that could be caused by possible future logging activities. The State was able to protect this natural area by receiving a donated conservation easement from the former property owner, Weyerhaeuser, Inc. in 2002.

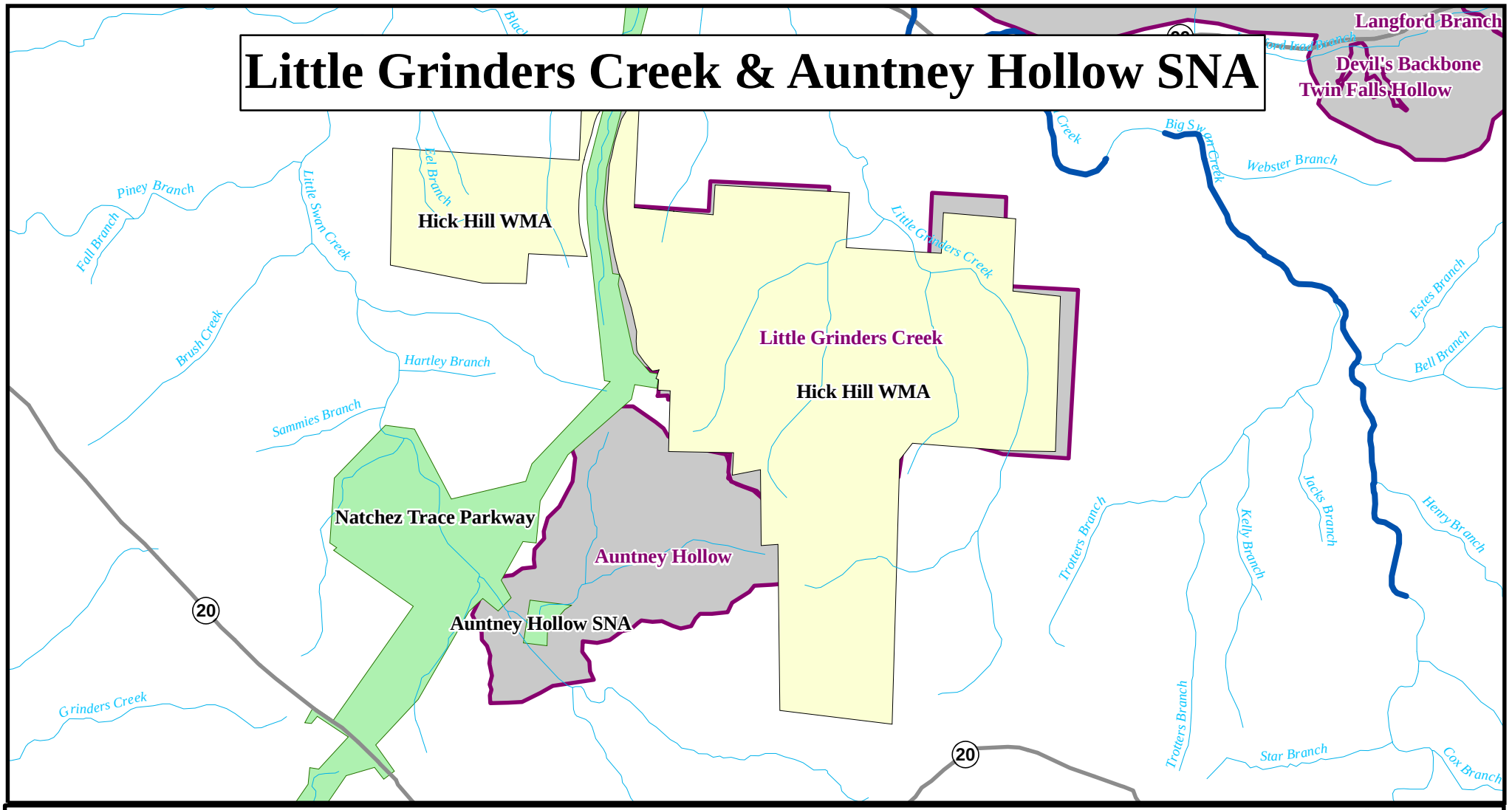
Auntney Hollow is one of the largest populations of Tennessee yellow-eyed grass known with dozens of clumps of varying size and age classes. The state listed Grass of Parnassus (*Parnassia grandiflora*) is also a co-dominant species in this seep and is a prominent plant and easy to identify because of its large round conspicuous leaves.

Strategy - The strategy for these areas includes acquisition of properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – Little Grinders Creek - 2,451 acres at an estimated cost of $2,651,000; Auntney Hollow - 1,078 acres at an estimated cost of $1,757,000.

Potential Partners – TDEC, USFWS, and private landowners.

Little Grinders Creek & Auntney Hollow SNA



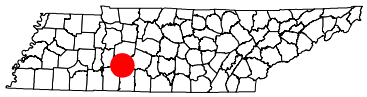
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands

Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams

Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point

Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites

General Location in Tennessee



Generated by the TWRA GIS Lab, July 2006.(tj)

LONG HUNTER STATE PARK AND COUCHVILLE CEDAR GLADE SNA

Location – (N36.0748, W86.5203) Long Hunter State Park is located approximately 20 miles southeast of Nashville between I-40 and I-24 in Davidson and Rutherford Counties. Couchville Cedar Glade adjoins the eastern boundary of Long Hunter State Park.

Long Hunter State Park contains 2600 acres along the shores of J. Percy Priest Lake. It has five units: Couchville, Baker's Grove, Bryant Grove, and Sellar's Farm. The park provides boating, fishing, biking, hiking, swimming and picnicking as well as nature study areas.

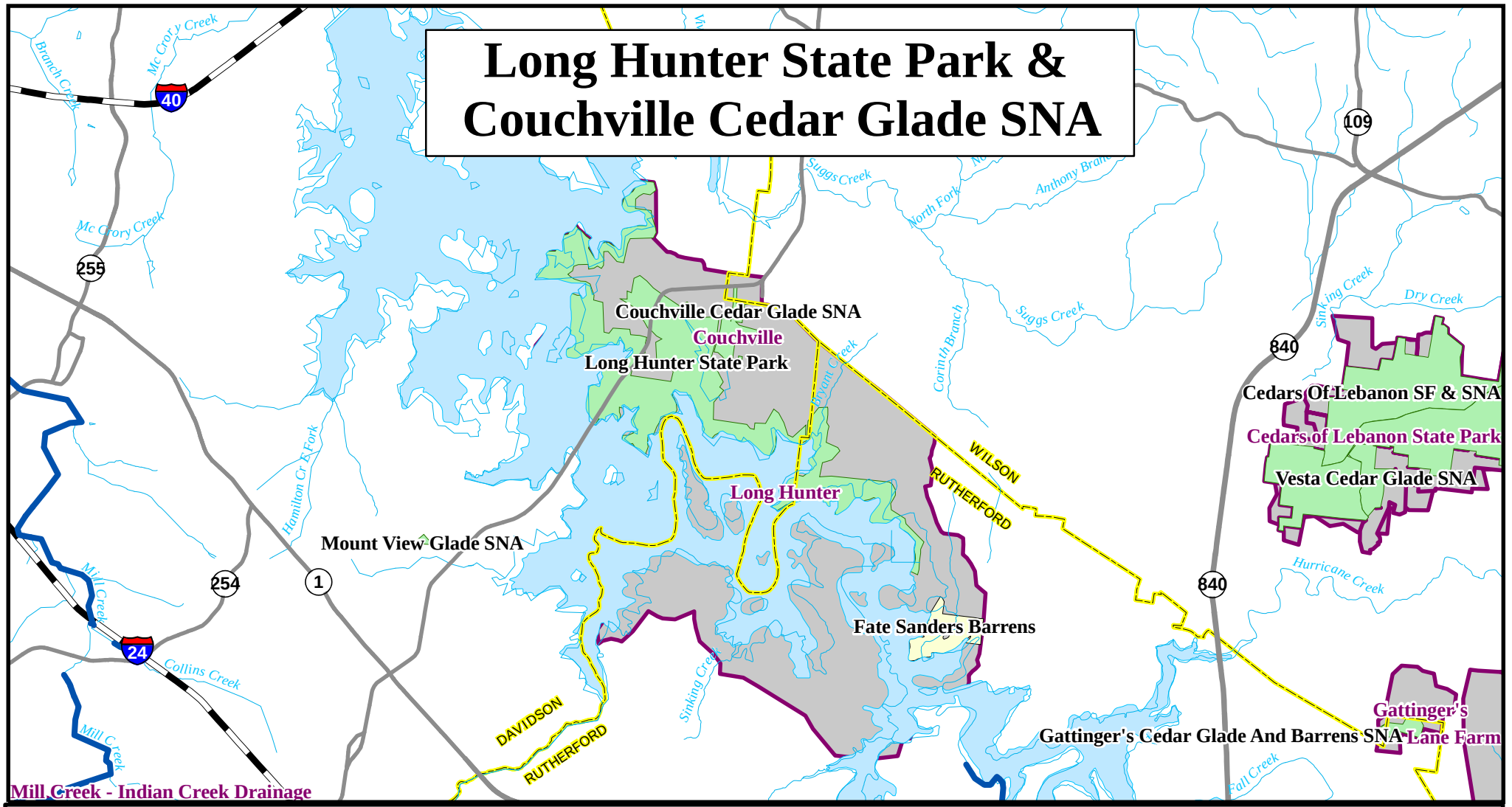
Long Hunter State Park provides miles of hiking trails traversing unique cedar glades, and a Mississippian Native American village. The endangered Tennessee coneflower is found here along with a rich population of fauna and flora typical of Middle Tennessee.

Couchville Cedar Glade is a 122-acre natural area contiguous with the east boundary of Long Hunter State Park. Site Importance Very High (B2) – Couchville supports one of the largest known and best quality populations of the federally endangered Tennessee coneflower (*Echinacea tennesseensis*). Couchville also provides one of the finest examples of a glade-barrens complex and protects many rare plant species. The glades are distributed where limestone outcropping and shallow soils limit growth of perennial plants and support annual species like leavenworthia, sporobolus, and sedum. The barrens species, that also includes Tennessee coneflower, occur where soils increase and grasses like little bluestem and side oats grama become dominant. The glades and barrens interface forming a complex. There are small woodland patches surrounding the glade-barrens complex with some shrubby vegetation present in the barrens. There are also some seasonal wet areas where small sedge openings occur and where an ephemeral stream habitat supports a small colony of the federally listed endangered leafy prairie clover (*Dalea foliosa*).

Strategy - The strategy for acquisition at Couchville Cedar Glade is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation rare species and representative communities. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage. The strategy for future acquisitions for Long Hunter State Park is to acquire properties surrounding the park that enhance the wildlife, aesthetics, interpretive and recreation mission of the park.

Land Protection Needs –4,725 acres at an estimated cost of $14,436,000.

Potential Partners - TDEC, USFWS, TCF and other land conservancy groups.


Long Hunter State Park &
Couchville Cedar Glade SNA
Couchville Cedar Glade SNA
Couchville
Long Hunter State Park
Long Hunter
Mount View Glade SNA
Fate Sanders Barrens
Cedars Of Lebanon SF & SNA
Cedars of Lebanon State Park
Vesta Cedar Glade SNA
Gattinger's Cedar Glade And Barrens SNA
Gattinger's
Lane Farm
Mill Creek - Indian Creek Drainage
WILSON
RUTHERFORD
DAVIDSON
RUTHERFORD
Mc Crory Creek
Suggs Creek
North Fork
Anthony Branch
Corinth Branch
Bryant Creek
Sinking Creek
Dry Creek
Hamilton Cr E Fork
Mill Creek
Collins Creek
Hurricane Creek
Fall Creek
40
109
255
840
254
1
24
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

LONG POND SLOUGH

Location – (N36.5025, W87.4231) Long Pond Slough is located in Montgomery County at mile 121 of the Cumberland River in Lake Barkley. The site is approximately 4.3 miles southwest of Clarksville.

Description – Long Pond Slough is a natural swamp located on an alluvial terrace of the Cumberland River. The site receives runoff water from adjacent bottomlands and also is spring-fed. Habitat diversity results from the presence of an open water zone surrounded by subsequent shallow water, swamp forest, and bottomland forest communities. According to Dodson (1977): "Long Pond Slough…is floristically significant because: (1) it is one of the few remaining lowland swamps on the Northwestern Highland Rim, and (2) the area is rapidly being encroached upon and filled in for agricultural purposes. The area comprises approximately 23.9 acres, 15 of which are permanently inundated. The slough is located on a natural levee approximately 1850 feet from the Cumberland River." In 1977 the site was nominated to the National Park Service as Registered Natural Landmark. In 1984 it was considered by the TWRA for inclusion as a wildlife observation area (WOA) and in 1985 the DNA petitioned the landowner to add the property to the TDEC Register of Natural Areas.

Significance – Site Importance High (B3) – Long Pond Slough is significant because the site provides habitat for the northern copperbelly watersnake (*Nerodia erythrogaster neglecta*), a species on the southern fringe of its range in northern middle Tennessee. It also provides habitat for at least four state-listed plants, including yellow water-crowfoot (*Ranunculus flabellaris*), featherfoil (*Hottonia inflata*cern), short-beaked arrowhead (*Sagittaria brevirostra*), and blue scorpionweed (*Phacelia ranunculacea*). Numerous amphibians have been documented at the slough, including the bird-voiced treefrog (*Hyla avivoca*) and mole salamander (*Ambystoma talpoideum*). Bewick's wren (*Thyromanes bewickii*- state endangered) is reported from the Cumberland River bottoms in the immediate vicinity.

Strategy – Potential threats to integrity include drainage and clearing for agricultural purposes. To protect the site, portions of the nearest surrounding fields must be returned to an uncultivated state to provide an effective sediment and chemical trap between actively tilled fields and the slough.

Land Protection Needs – Currently the TWRA owns and manages 80 acres, a portion of which includes the slough property. The remaining property is privately owned, and much of this is surrounded by soybean fields. An estimated 920 acres of privately owned slough and agricultural fields should be acquired to protect the integrity of the slough at an estimated cost of $1,870,000.

Potential Partners – TWRA, Austin Peay State University, USACE, and TDEC.

MANUS ROAD CEDAR GLADE SNA

Location – (N35.7842, W86.2736) Manus Road Cedar Glade is located in Rutherford County approximately 10 miles east of Murfreesboro.

Description - Located on the Central Basin, Manus Road supports a high quality limestone cedar glade with rare and endemic plants.

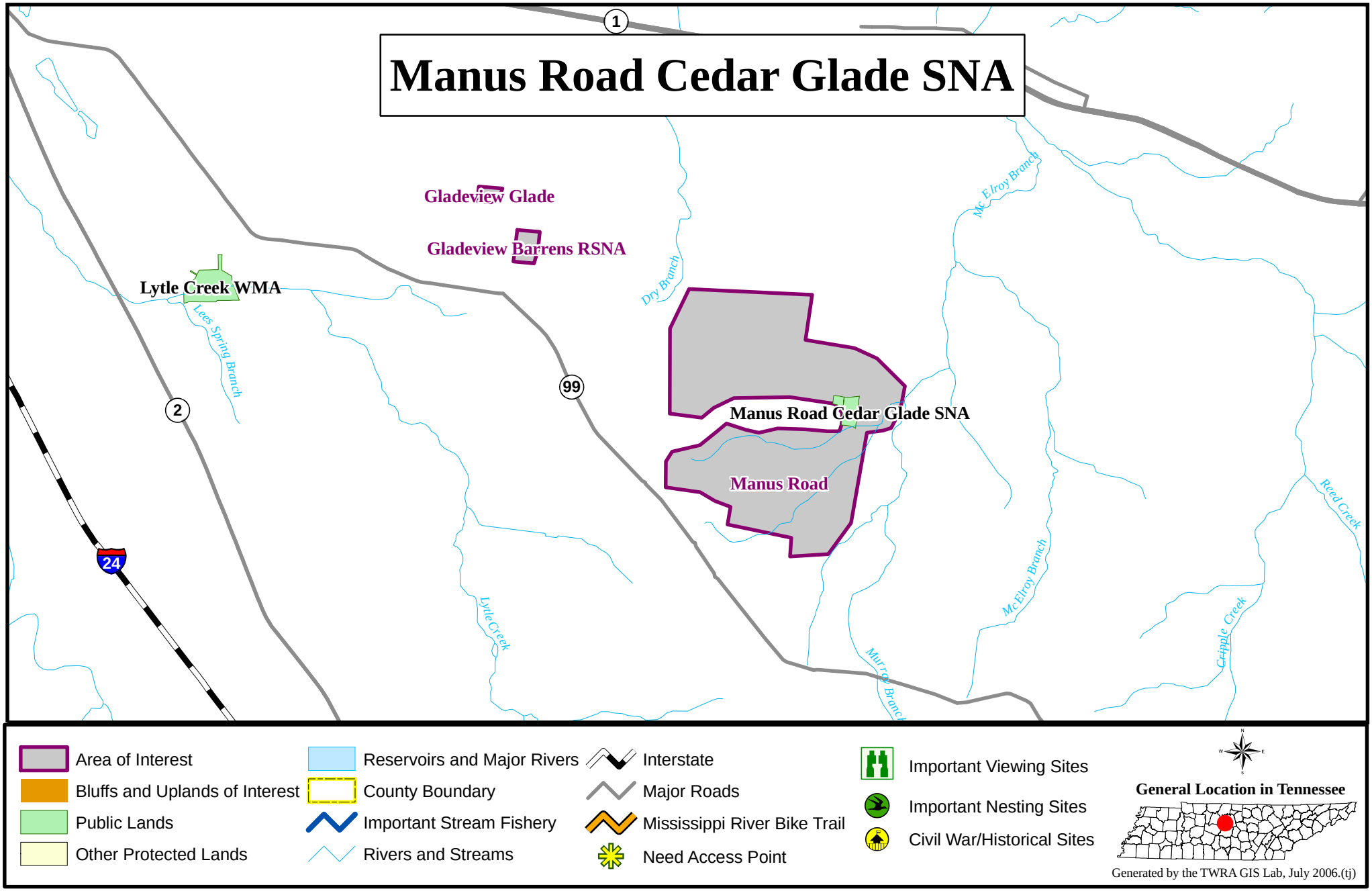
Significance – Site Importance Very High (B2) – Manus Road Cedar Glade supports rare and endemic plants that include the federally endangered Pyne's ground-plum, (*Astragalus bibullatus*), evolvulus (*Evolvulus nuttallianus*), and Tennessee milk-vetch (*Astragalus tennesseensis*). This Manus Road population of Pyne's ground-plum is one of only three populations that are known to occur. All three populations are located within a twelve-mile radius of Murfreesboro. The population is comprised of colonies scattered throughout this area. It was discovered by a private landowner who had read a featured article in the Murfreesboro Daily News Journal about the protection of Pyne's ground-plum at Flat Rock SNA. After discovering it on his property, he contacted the DNA and expressed interest in helping protect the plant. He subsequently sold the land to the State at fair market value to be protected as a SNA.

The natural area is largely open glades in shallow soil and limestone outcropping. Some small barrens areas with perennial grasses like little bluestem and forbs are scattered. Small areas of shrub and cedar and hardwood trees are also interspersed across the natural area. The usual species of shrubs including glade privet, coralberry, St. Johnswort, and winged sumac occur here along with cedars, winged elm, ash, hackberries, southern shagbark hickory and various oaks.

Strategy - The strategy for acquisition at Manus Road Cedar Glade is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 1,279 acres at an estimated cost of $2,058,500.

Potential Partners – TDEC and USFWS.


Manus Road Cedar Glade SNA
Gladeview Glade
Gladeview Barrens RSNA
Lytle Creek WMA
Manus Road Cedar Glade SNA
Manus Road
Dry Branch
Mc Elroy Branch
Lees Spring Branch
Lytle Creek
McElroy Branch
Reed Creek
Cripple Creek
1
2
24
99
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

MAY PRAIRIE SNA/HICKORY FLATS WMA

Location – (N35.4633, W86.0243) May Prairie SNA and Hickory Flats WMA are located on the Eastern Highland Rim in Coffee County approximately one mile south of Manchester off U.S Hwy. 41.

Description - May Prairie is a 250-acre natural area in Coffee County that adjoins the Hickory Flats WMA, which combined provides more than 1,000-acres of public land. The most impressive feature at May Prairie is the open grassland community that protrudes into the surrounding oak forest where the oak barrens begin. The open grassland is primarily comprised of a little bluestem community and a tall grass prairie community with an occasional sedge meadow found in wet depressions. A swamp forest forms the headwaters of what once was the "prairie tributary." The tall grass prairie component with big bluestem (*Andropogon gerardii*), Indian grass (*Sorgastrum nutans*), switchgrass (*Panicum virgatum*) and plume grass (*Erianthus giganiteus*) tend to follow the old prairie tributary. The little bluestem community represents the drier end of the prairie gradient and is prevalent throughout the open grassland.

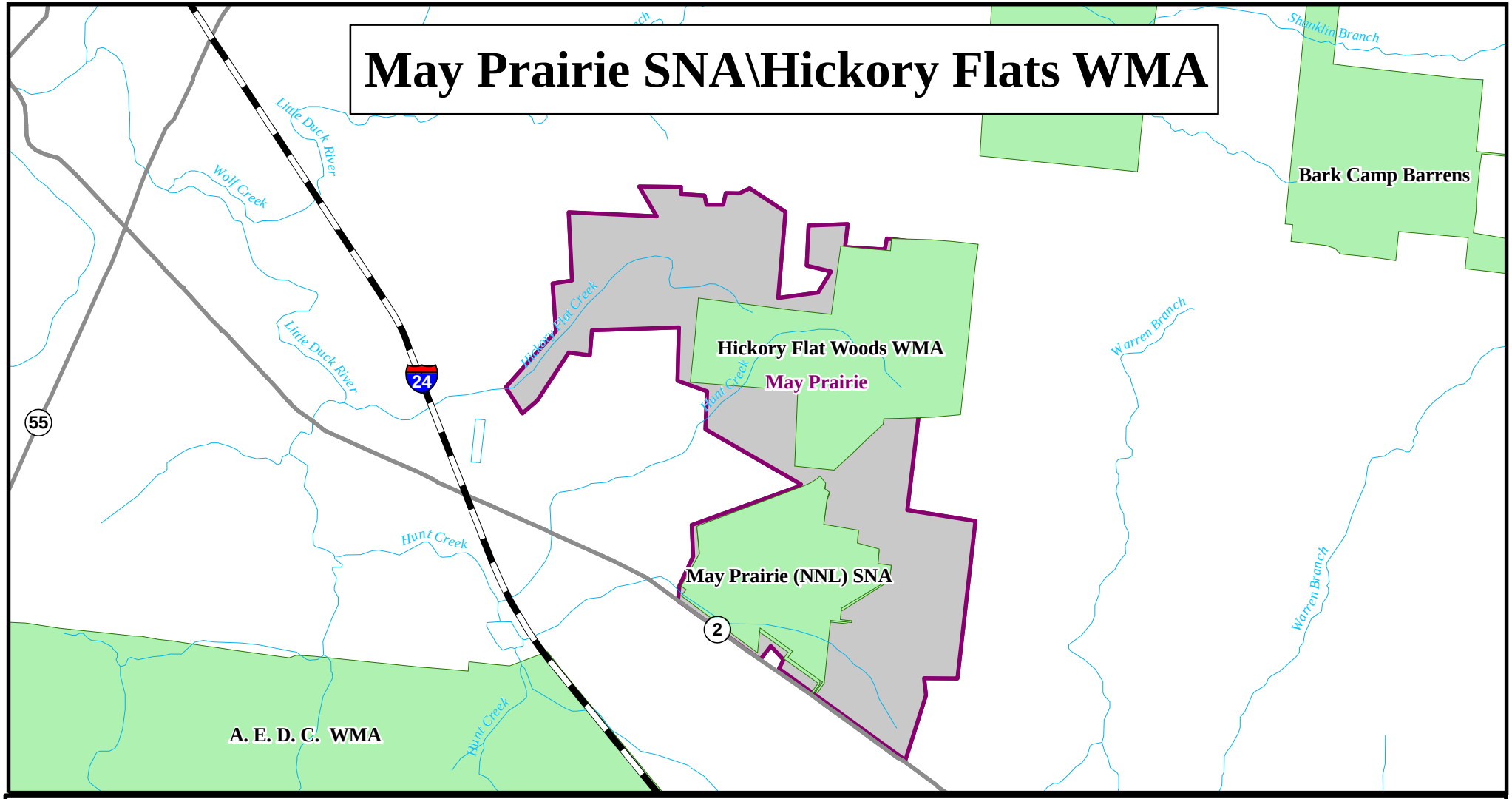
Significance - May Prairie is one of the State's most floristically diverse natural areas with 25 of its more than 300 plant species that occur here considered rare in Tennessee. It supports disjunct plants known from the Atlantic and Gulf Coastal Plains including the only state location for both the snowy orchid (*Platanthera nivea*) and the coastal false-asphodel (*Tofieldia racemosa*). In addition, May Prairie has many species common to the Midwest tall grass prairie that are unusual in the Southeast. Its floristic display is noteworthy with the rare southern dock (*Silphium pinnatifdum)* and two species of blazing star (*Liatris spicata* and *L. microcephala*) prominently flowering in late summer. There are hundreds of acres of restorable oak barrens associated with the natural area and the WMA. May Prairie is also recognized by the Department of the Interior as a National Natural Landmark.

Strategy: - The site conservation plan for May Prairie and Hickory Flats WMA is to acquire the surrounding intact woodland and a large agricultural field that is potentially restorable to grassland prairie. The project would increase the area to 2,009 acres of public land.

Land Protection Needs – 1,048 acres at an estimated cost of $1,700,000.

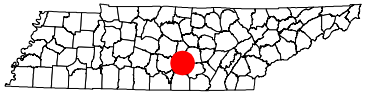
Potential Partner – TWRA and TDEC.

May Prairie SNA\Hickory Flats WMA



Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites

General Location in Tennessee



Generated by the TWRA GIS Lab, July 2006.(tj)

MCMINNS BLUFF AND RISING SUN BLUFF

Location – (N33.2098, W86.9645) McMinns Bluff is located in Davidson County on Old State Route 12, beginning at Back Creek Bluffs on the east side (about 3 miles west of Scottsboro) and extends west for 2 miles along a limestone bluff line and railroad corridor along the north bank of the Cumberland River and ends at Bull Run Road. Rising Sun Bluff is located about one-half mile east of McMinns Bluff and is separated by Sulphur Creek at its confluence with the Cumberland River. Although it is a separate bluff line, it falls within the boundary of a potential site design for McMinns Bluff.

Description – McMinns Bluff site consists of 100 acres of limestone talus bluff line and hilltops (knobs). The bluff faces are xeric and unstable due to the loose, limestone talus slopes that have eroded naturally and from road building. The bluff height ranges from 240 – 340 feet above the river level. The trees and shrubs exhibit stunted growth on the talus slopes and bluff tops; however, the knobs support a Virginia pine, mountain laurel and chestnut-post oak community. At this location the Cumberland River flows from the Central Basin into the Highland Rim and the sites are within the Highland Rim Escarpment, but are mostly below the cap rock of the Fort Payne Formation and are considered to be within a reentrant valley of the Central Basin. Rising Sun Bluff consists of 50 acres and is a southwest facing bluff with talus slopes and rock ledges.

At McMinns Bluff, the Short's bladderpod (*Lesquerella globosa*) is are scattered throughout but are concentrated along the roadside, on top of the bluff, along the railroad corridor, and on the talus slopes. The railroad along this stretch has not been operational for many years; however, maintenance is still done with clearing and herbicide spraying. These are a definite threat to the bladderpod population. At Rising Sun Bluff, the *L. globosa* plants are located along the ledges for about a distance of 2,000 feet about 10 feet above the water. This part of the Cumberland River is in the Cheatham Lake Reservoir Area and managed by the USACE. The water levels are controlled and probably fluctuate seasonally.

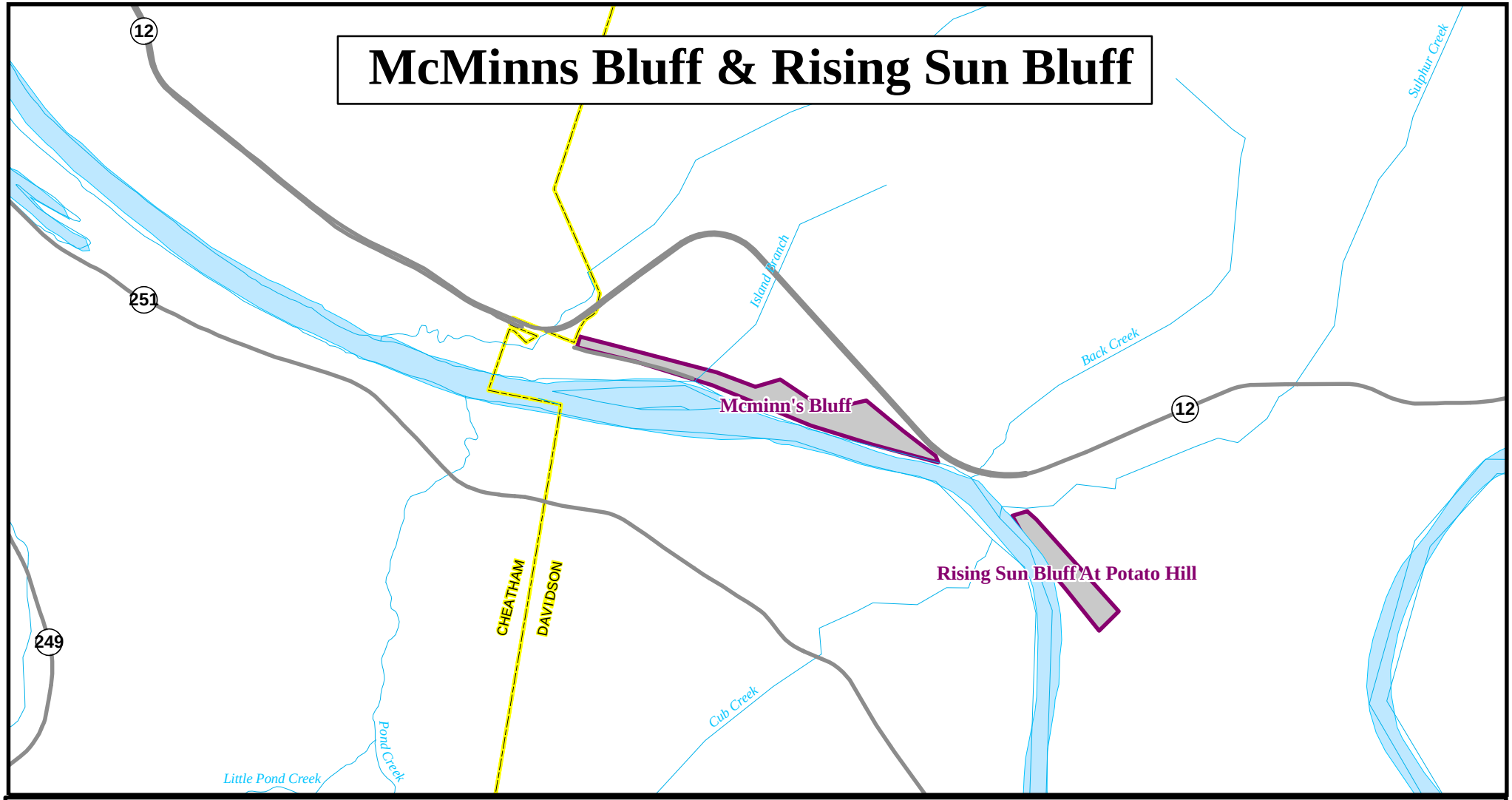
Significance – Site Importance High (B2). These sites contain a large population of Short's bladderpod (*Lesquerella globosa*) a globally rare (G2) species, which is state listed as endangered. It is also listed as a "Candidate" for federal status by the US Fish and Wildlife Service. The highest bluff (about 340 feet) on McMinns Bluff Site is at Bull Run Road and provides an incredible view of the Cumberland River Valley. There are bladderpod plants on the top of this bluff face. The site is geologically unique also; the bluffs are composed of Mississippian, Devonian, Silurian and Ordovician strata. The plant is a biennial and probably requires the loose soil and rock base that the talus slopes provide. Similar to the other species of *Lesquerella*, *L. globosa* grows best with some disturbance. The pine-oak-heath forest type is unique and is believed to be a disjunct of the Cumberland Plateau. This is the best existing example of this forest type according to Elsie Quarterman who nominated this site for designation as a National Natural Landmark in 1978.

Strategy – State Route 12 was rerouted and the old highway (Old State Route 12) is now a county road, used primarily for access to local homes and farms. There could be an opportunity to enter into an agreement with Davison County for protection of this site. The strategy for acquisition is to acquire properties that include both of these sites in a site design for access control, watershed protection, and preservation of rare species and this exemplary plant community, the pine-oak-heath forest type. This is the second largest site for *L. globosa* in Tennessee, and at present, there are no protected sites for this species in Tennessee. Most of the sites are on the bluffs of the Cumberland River.

Land Protection Needs – 150 acres at an estimated cost of $245,000.

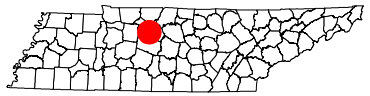
Potential Partners – TDEC, USFWS, and USACE.

McMinns Bluff & Rising Sun Bluff



- Area of Interest
- Bluffs and Uplands of Interest
- Public Lands
- Other Protected Lands
- Reservoirs and Major Rivers
- County Boundary
- Important Stream Fishery
- Rivers and Streams
- Interstate
- Major Roads
- Mississippi River Bike Trail
- Need Access Point
- Important Viewing Sites
- Important Nesting Sites
- Civil War/Historical Sites

General Location in Tennessee



Generated by the TWRA GIS Lab, July 2006.(tj)

MILL CREEK

Location – (N35.9763, W86.6787) Mill Creek is located in Williamson and Davidson Counties. The stream has its origins in the headwater tributaries south of Nolensville (Williamson County) and drains north through the Central Basin approximately 15 air miles to its confluence with the Cumberland River (Davidson County).

Description – This project focuses on the more ecologically intact headwater portions of the Mill Creek watershed, primarily in the greater Nolensville area and southernmost Davidson County. The stream segments in question include Indian Creek, Owl Creek, Mill Creek proper, and numerous unnamed tributaries. These constitute three distinct portions of the watershed: 1) Indian Creek, 2) upper Owl Creek, and 3) greater Nolensville. These areas are rapidly being urbanized, and barring conservation planning will predictably come to resemble more densely populated, degraded areas in the downstream portions of the watershed.

Significance – Site Importance Outstanding (B1) – Mill Creek is the only known location for the endemic, federally endangered Nashville crayfish (*Orconectes shoupi*). The crayfish may be found from main stem Mill Creek near its confluence with the Cumberland River, upstream into even certain first-order tributaries in the Nolensville area. The Mill Creek watershed also is home to several other rare species, including the redband darter (*Etheostoma luteovinctum*- state in-need-of-management), water stitchwort (*Stellaria fontinalis*- state threatened), Duck River bladderpod (*Lesquerella densipila*- state threatened), and limestone fame-flower (*Talinum calcaricum*- state special concern.

Strategy – Most of Mill Creek and its tributaries are listed as impaired by TDEC-WPC due to siltation. The Nashville crayfish, though more tolerant to habitat degradation than some other invertebrates, remains very susceptible to permanent stream alterations, sedimentation, excessive water withdrawals, point and nonpoint discharges, poor agricultural practices, pesticides, and loss of riparian buffers. Stabilization and enhancement of the water quality in Mill Creek and its tributaries is key to the survival of the species.

Land Protection Needs – 1,520 acres at an estimated cost of $3,290,000

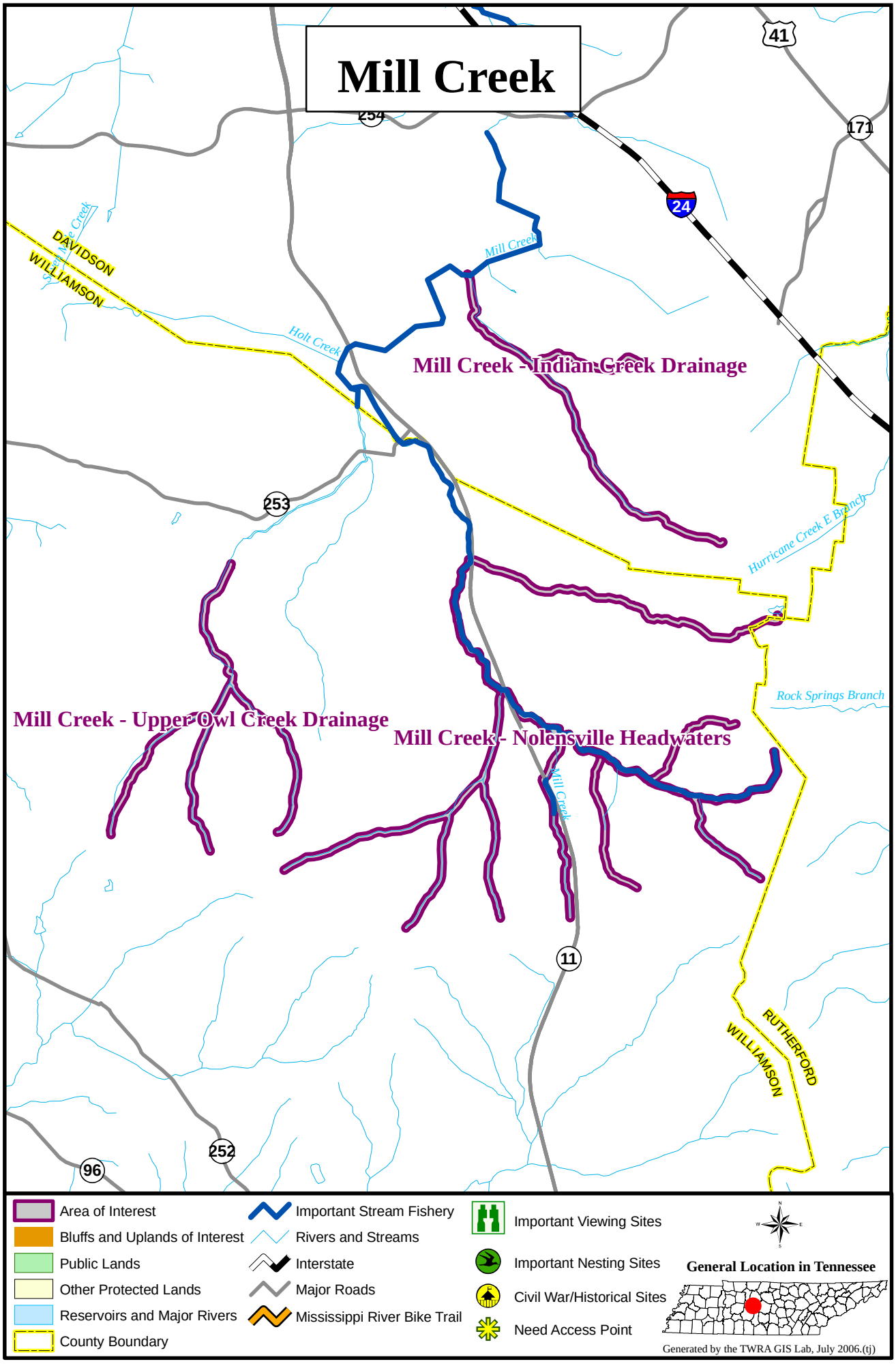
All streams in the area are potentially threatened in the near term by incompatible livestock and agricultural practices and in the long term by urbanization and infrastructure development. Conservation needs for the three targeted portions of the drainage are determined by creating a 50-meter buffer for each of the priority segments: 1) Indian Creek (50 m buffer: 227 acres), 2) upper Owl Creek (50 m buffer: 431 acres), and 3) Nolensville headwaters (50 m buffer: 862 acres). Ideally, large tracts surrounding those segments would be conservation targets as well.

Each site contains a robust population of the Nashville crayfish in certain segments, but also includes more headwater portions that are key to downstream water quality, even if

they do not support crayfish populations themselves. As a practical matter not all of these segments will be conserved. However, it is imperative that some proportion is protected, as no public lands in the Mill Creek watershed adequately protect the species. Having an upstream reservoir of *O. shoupi* populations from which to draw will be key to resurrecting downstream numbers following periodic kills.

This may be accomplished through several measures, including livestock fencing, restoration of native trees along stream corridors, conservation easements, and fee simple acquisition of properties in the Mill Creek watershed. Key also is rigid enforcement of current federal, state, and local water quality regulations.

Potential Partners – USFWS, TWRA, TNC, Williamson and Davidson County governments, Town of Nolensville, TDEC, and NRCS.


Mill Creek
41
254
171
24
Mill Creek
DAVIDSON
WILLIAMSON
Holt Creek
Mill Creek - Indian Creek Drainage
253
Hurricane Creek E. Branch
Rock Springs Branch
Mill Creek - Upper Owl Creek Drainage
Mill Creek - Nolensville Headwaters
Mill Creek
11
RUTHERFORD
WILLIAMSON
252
96
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
Need Access Point
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

MONTGOMERY BELL STATE PARK

Location – (N36.1049, W87.2918) Montgomery Bell State Park is located approximately 40 miles west of Nashville on Highway 70 east of Dickson in Dickson County.

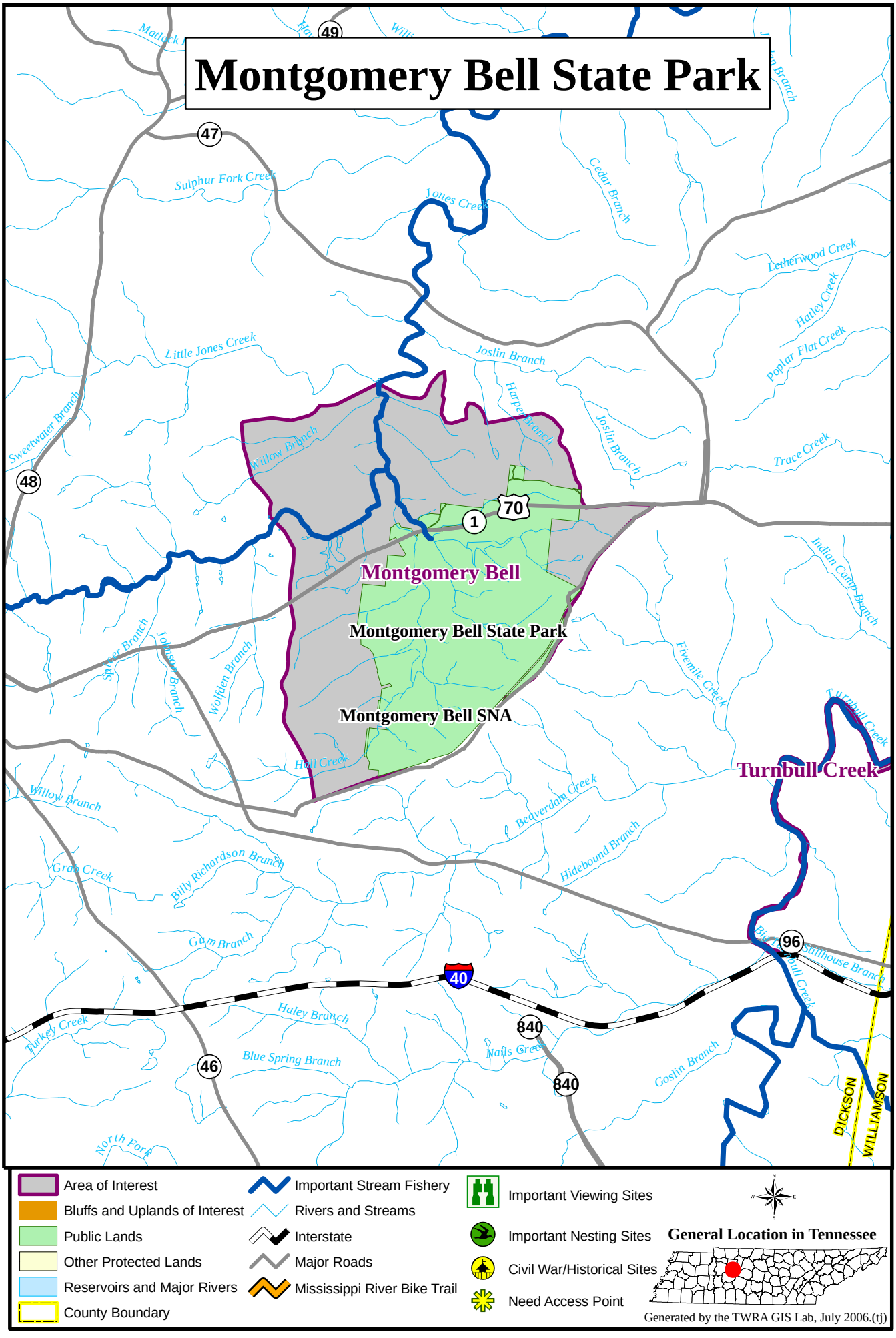
Description - Montgomery Bell is a 3850 acre park offering camping, fishing, boating, hiking, picnicking, mountain biking, swimming and many other outdoor activities. The park also provides a modern inn and conference center as well as an 18 hole golf course, cabins and group camp.

Significance - Montgomery Bell State Park has an abundance of historical, natural and cultural resources for the park visitor to enjoy. The park includes a 600 acre oak-hickory forest and it provides the best-known example of representative oak-hickory forest ecosystems on the Western Highland Rim in Tennessee. The park is also the "birthplace" of the Cumberland Presbyterian Church. The park was developed by the Works Progress Administration and the Civilian Conservation Corps in the 1930's.

Strategy - The strategy for future acquisitions for Montgomery Bell State Park is to acquire properties surrounding the park that contain representative forest cover types of the Western Highland Rim and those lands that enhance the wildlife, aesthetics, interpretive and recreation mission of the park.

Land Protection Needs – 2,295 acres at an estimated cost of $7,700,000.

Potential Partners – TDEC, TCF, and other land conservancy groups.


Montgomery Bell State Park
Montgomery Bell
Montgomery Bell State Park
Montgomery Bell SNA
Turnbull Creek
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
Need Access Point
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

MULBERRY BRIDGE BLUFF

Location – (N35.1544, W86.4645) Mulberry Bridge Bluff site is located in Lincoln County on the Elk River adjacent to the Mulberry Bridge crossing, approximately 1 mile upstream of the confluence of Mulberry Creek, about 15 miles southwest of Lynchburg. (Lincoln County Bat Cave map)

Description – The site encompasses approximately 25 acres along a moderately steep limestone bluff on the Elk River. The west to southwest facing bluff and slope are forested and the Alabama snow wreath shrubs are located on the upper two-thirds of the slope. The plants also form a band on the upper and mid-slope about 12-100 feet wide for a length of 700 feet and then broaden and extend to the lower slope toward the south part of the bluff. The forested slope is open with the snow wreath dominant in the understory. Associated dominant understory and overstory species are redbud, white ash, hop hornbeam, Shumard oak, chinquapin oak, mock orange, basswood, St. John's wort, poison ivy, red cedar, buckeye, and Carolina buckthorn. Invasive Japanese honeysuckle is a problem at the site.

Significance – Site Significance is Very High (B2) – *Neviusia alabamensis*, Alabama snow wreath, is listed as state threatened and is globally rare and imperiled (G2). This is the second largest of only four known sites in Tennessee. At this site there is also a 1980 record of a rare mussel, rabbitsfoot (*Quadrula cylindrica cylindrica*), found in the Elk River. This species has a global rank of G3.

Strategy - The first strategy would be to survey and delineate the population extent of the Alabama snow wreath at this site. Properties should be acquired within and adjacent to the site boundary for access or access control, watershed protection, and preservation of rare species.

Land Protection Needs – Maximum of 29 acres at an estimated cost of $34,000.

Potential Partners – TDEC.

OLD STONE FORT STATE ARCHAEOLOGICAL PARK.

Location – (N35.4843, W86.1074) Old Stone Fort is on Hwy 41 immediately north of Manchester in Coffee County.

Description - Old Stone Fort is a world class Native American archaeological site. The park is home to a special type of Native American ceremonial mound. The park also consists of a museum, nine hole golf course, campground, picnic areas and hiking trails.

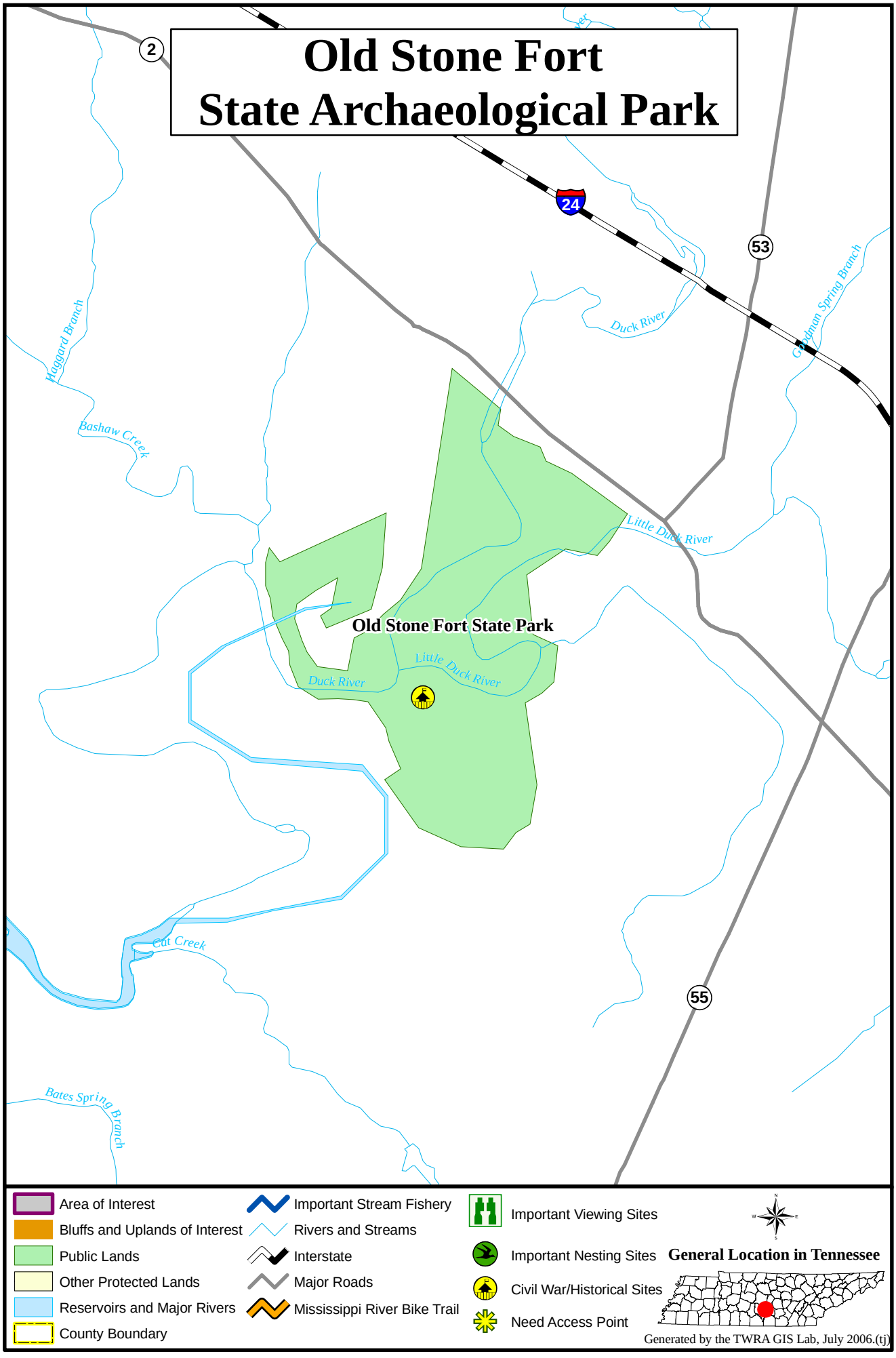
Significance - Old Stone Fort is the name given to a special type of Native American mound site. It is a hilltop ceremonial enclosure begun 2000 years ago and used at least through the fifth century.

Strategy - The strategy for future acquisitions for Old Stone Fort Archaeological Park is to acquire properties surrounding the park that enhance the wildlife, aesthetics, interpretive and recreation mission of the park.

Land Protection Needs – 158 acres at an estimated cost of $330,000.

Potential Partners – TDEC, TCF and other land conservancy groups.

Old Stone Fort State Archaeological Park



OVERBRIDGE SNA

Location – (N35.8461, W86.2087) Overbridge SNA is located in Rutherford County approximately eight miles east of Murfreesboro. (See Flat Rock Designated SNA map)

Description - Located on the Central Basin, Overbridge is a 70-acre natural area.

Significance – Site Importance Outstanding (B1) – It supports a globally rare Middle Tennessee cedar glade ecosystem that provides habitat for six state listed plant species, as well as leafy prairie clover (Dalea foliosa) and Pyne's ground plum (*Astragalus bibullatus*), which are both federally endangered plant species.

The natural area has a small stream running through it called Dry Creek. It provides habitat for leafy prairie clover and a small colony of yellowroot (*Zanthoxylum americanum*), which is an uncommon shrub. The east section of the property contains most of the cedar glade with some barrens occurring where deeper soils support perennial grasses like little bluestem and side oats grama. Both the cedar glades and the barrens are surrounded by patches of eastern red cedar and mixed hardwoods which include several oak species like chinquapin, post, and Shumard's along with blue ash, winged elm, and southern shagbark hickory. These are typical tree species associated with cedar glades, and they are usually stunted due to shallow soil conditions and drought conditions that maintain the openness of the glades.

The natural area is surrounded by a few small farms and single-family residences. It had once been part of a 260-acre farm owned by Overbridge Cattle Company and it was purchased by the State during foreclosure procedures in 1993. TNC has also been active here, and has assisted in protecting Pyne's ground plum by fencing the area.

Strategy - The strategy for acquisition at Overbridge is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 150 acres at an estimated cost of $243,000

Potential Partners – TDEC and USFWS.

PARKS CREEK SWAMP AND HIGHWAY 53 ROADSIDE BARRENS

Location – (N35.5835, W86.0669) The 108-acre Parks Creek and 41-acre Highway 53 Roadside Barrens are located in Coffee County. Parks Creek Swamp is located about 7 miles north of Manchester off Hwy 53. Highway 53 Roadside Barrens is located about 8 miles north of Manchester.

Description - Located on the Eastern Highland Rim, both of these projects are open herbaceous dominated Barrens vegetation.

Significance – **Parks Creek Swamp** (Site Importance Moderate - B4) is an extensive swamp forest system. It was examined as part of a survey for natural areas performed in 1982-1983 by the DNA. Before the inventory was complete and before landowner contact could be initiated, extensive logging and timber removal took place on at least some of the tracts. Outside of the wetlands on the north portion of Arnold Air Force Base, Parks Creek Swamp is the largest forested wetland tract remaining in the Barrens. Rare plant records are limited, and most of the swamp has had significant logging impacts in about 1983-1984. While some areas of older timber could exist on an unlogged tract, the principal known value of the site is for wetland values and general biodiversity. Rare plant elements include: *Lobelia canbyi* (state threatened), *Lilium michiganensis* (state threatened), and *Campanula aparinoides* (state special concern) (identified by D. Horn in 1985). *Ambystoma talpoideum* – the mole salamander is also present on the site.

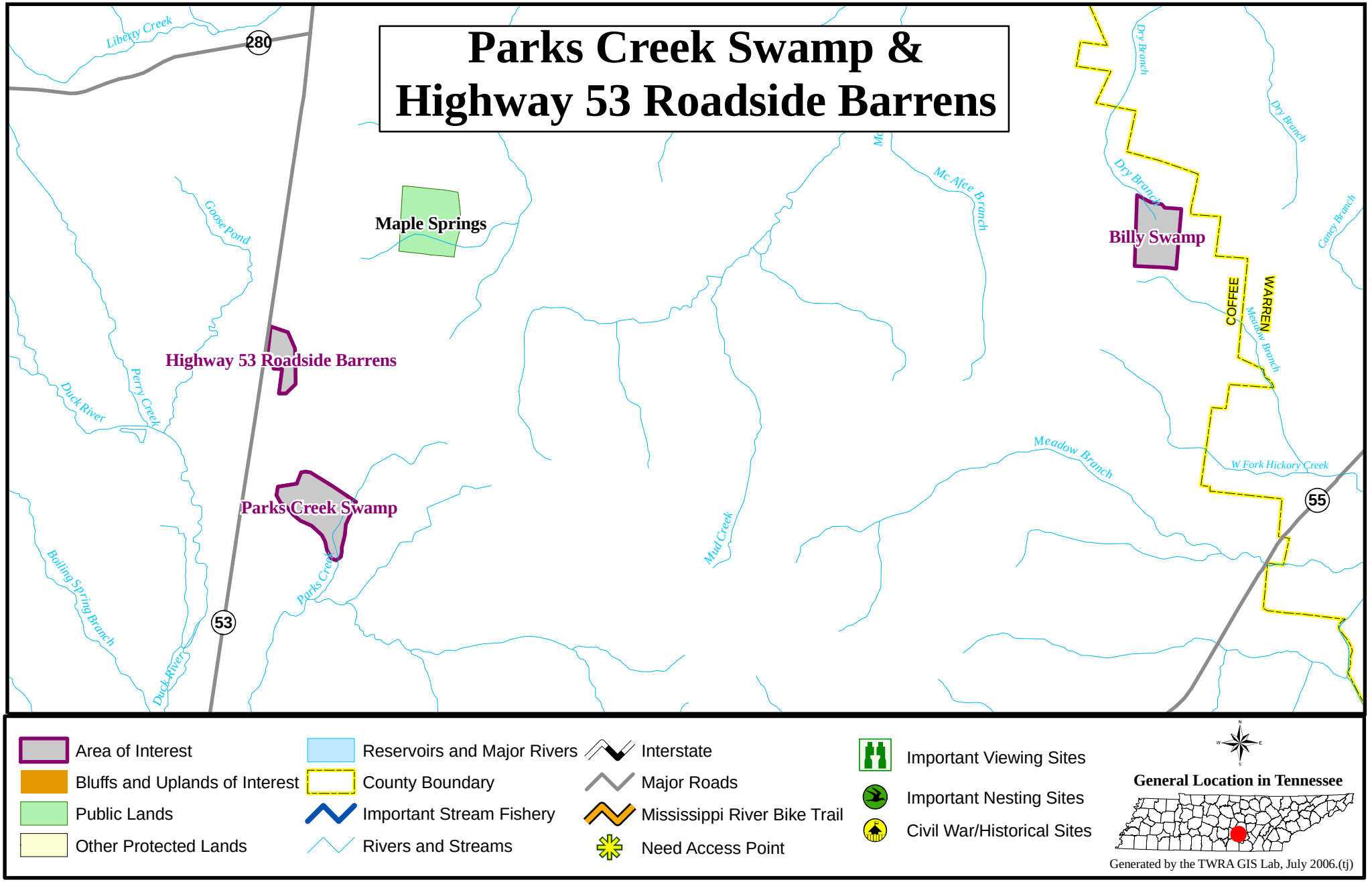
Highway 53 Roadside Barrens (Site Importance Moderate - B4) is an extensive herbaceous dominated Barrens community near Parks Creek Swamp and could be included in a macrosite design. Rare plant elements include *Lespedeza angustifolia*, *Lobelia canbyi, Lycopodiella alopecuroides, Drosera brevifolia,* and *Iris Prismatica*, all of which are state threatened..

Other rare elements in the area include: *Panicum acuminatum* var. *leucothrix* and the endemic Hemitremia flammea. Site management should include watershed protection for the flame chub.

Strategy – The strategy for acquisition at Parks Creek Swamp and Highway 53 Roadside Barrens is to acquire properties within and adjacent to the site design (site boundary and area between two sites) for access or access control, watershed protection, and preservation of rare species and representative communities of Barrens vegetation and imbedded wetlands. Sites could be included in a macrosite design. Preservation of these rare species will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 149 acres at an estimated cost of $162,000.

Potential Partners – TWRA and TDEC.


Parks Creek Swamp &
Highway 53 Roadside Barrens
Liberty Creek
280
Goose Pond
Maple Springs
Mc Afee Branch
Dry Branch
Dry Branch
Dry Branch
Billy Swamp
Caney Branch
COFFEE
WARREN
Meadow Branch
Highway 53 Roadside Barrens
Duck River
Perry Creek
Meadow Branch
W Fork Hickory Creek
55
Parks Creek Swamp
Mud Creek
Parks Creek
Boiling Spring Branch
53
Duck River
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

PHILADELPHIA AND TEXTBOOK GLADES

Location – (N 35.5411, W86.9217) In close proximity to each other, Philadelphia and Textbook Glades are located in Maury County. Both sites are located along Newcut Road, just west of Interstate 65. Philadelphia Glade is located near the intersection of Newcut and Fred White Roads. (See Duck River Habitat Corridor and State Scenic Area map)

Description –The habitat consists of Central Basin limestone cedar glades and barrens and dry limestone cedar/hardwood forests. The area is a mosaic of glades, barrens and dry woods. Cedar glades are easily recognizable habitats which lack tree canopy, often have exposed limestone at the surface, and the few woody plants (e.g. mainly eastern red cedar, and glade privet) which do occur are often stunted. Even in these harsh conditions the area contains some showy plants such as Nashville breadroot (*Pediomelum subacaule*), Gattinger's prairie clover (*Dalea gattingeri*), Gattinger's lobelia (*Lobelia appendiculata* var. *gattingeri*), Eggleston's violet (*Viola egglestonii*), etc. Textbook Glade has a high species diversity due to the various glade habitats including bare rock, gravel, grassland, and gladey woods and each of these habitats contain intermittent streams and seasonal washes.

Significance – Site Importance High (B3) – Leafy prairie clover (*Dalea foliosa*), a federally endangered plant, which is rare and uncommon globally occurs at Philadelphia Glade. Both sites posses additional state-listed plants including glade cress (*Leavenworthia exigua* var. *exigua*), Tennessee milk-vetch (*Astragalus tennesseensis*), sunnybells (*Schoenolirion croceum*) a striking spring-flowering plant of the lily family which occurs in the wet-weather washes of the glades, and limestone fame flower (*Talinum calcaricum*) which grows on open pavement-like limestone glades.

Strategy - The strategy for conservation of these two sites would be to conduct additional inventories and delineate further their ecological boundaries.

Land Protection Needs –92 acres at an estimated cost of $110,000.

Potential Partners – TDEC, TNC , and USFWS.

PICKADILLY PRAIRIE

Location – (N36.0890, W87.4781) Pickadilly Prairie is located in Dickson County approximately 4.5 miles west of the city of Dickson. It is primarily on the north side of Hwy. 70, with a small portion on the south side.

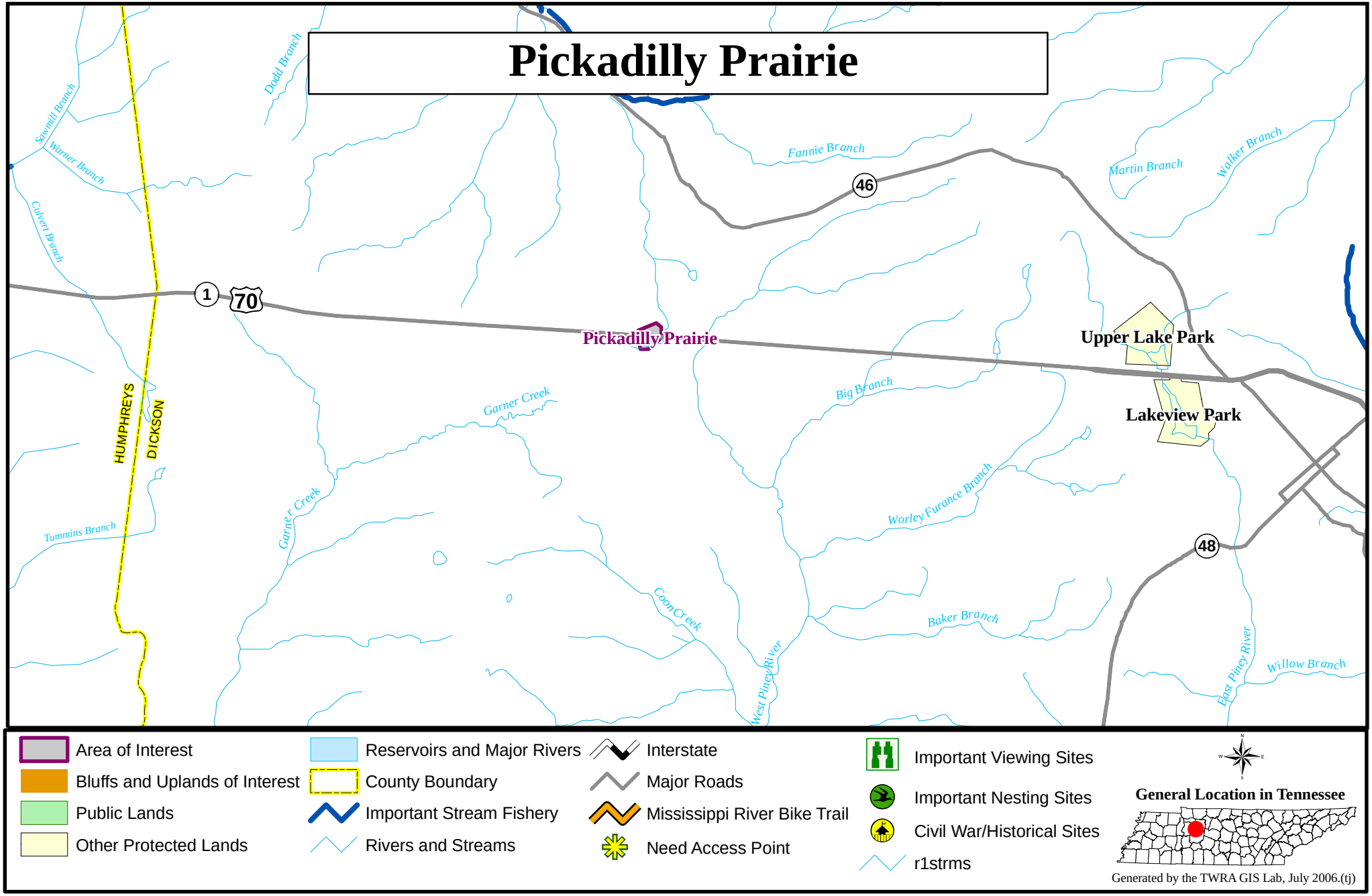
Description – This site is a small grassland-prairie remnant with a sparse overstory. The herbaceous species have a more mesic affiliation while the woody species are more xericly affiliated.

Significance – Site Importance High (B3) – Pickadilly Prairie is a small remnant of one of the most endangered ecosystems in Tennessee, the native grassland community. Few significant native grasslands remain in Tennessee, making the conservation of any significant remaining sites critically important. This site is a dry barrens with an extensive stand of native grasses, with typical native forbs. Dominant grass species include *Schizachyrium scoparium* and *Andropogon gyrans*. Rare species documented from very nearby and that could occur on the site include large-toothed aspen (*Populus grandidentata*) and yellow nodding ladies-tresses (*Spiranthes ochroleuca*).

Strategy - The strategy for acquisition at Pickadilly Prairie is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Preservation of this rare community will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 16 acres at a cost of $25,500.

Potential Partners – TDEC, NRCS, and TWRAP


Pickadilly Prairie
Dodd Branch
Sawmill Branch
Warner Branch
Culvert Branch
Fannie Branch
Martin Branch
Walker Branch
46
1
70
Pickadilly Prairie
Upper Lake Park
Lakeview Park
HUMPHREYS
DICKSON
Garner Creek
Big Branch
Garner Creek
Tummins Branch
Worley Furance Branch
48
Coon Creek
Baker Branch
West Piney River
East Piney River
Willow Branch
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
r1strms
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

PIPER CAVES

Location – (N36.3014, W85.9923) The Piper Caves are located in Smith County. The caves are found "0.9 mile west and slightly south of Monoville, 1,100 yards south of State Hwy. 25, at the head of a hollow in the ridge between Peyton Creek and Cumberland River, at an elevation of 620 feet." (Barr, 1961). (See Bridgewater Cave map)

Description – These caves occur in Bigby-Cannon limestone. According to Barr (1961): "Piper Cave, well-known to residents of Smith County, received its name from Joseph Piper, who in years past owned the property on which the cave is located and mined saltpeter in the cave. It is a typical Allegheny-pattern cave of rather large dimensions. Many remains of saltpeter hoppers are to be seen in the cave. They are poorly preserved, most of the wood having rotted away because of the high humidity. Most of the vats are V-shaped troughs, although some were apparently barrel-shaped. Speleothems are few, although a beautiful flowstone is developed on the west wall of the north branch, and an interesting series of rimstone pools may be seen at the end of the south branch. These rimstone formations are dry in summer but fill with water during the winter and spring. The cave is notable for the relative ease with which it is possible to negotiate its 2,600 feet of large passages, and there is a well-trodden path throughout.

The entrance, in a collapse sink 100 feet in diameter, is 6 feet high and 12 feet wide. Across the sink, in the south wall, is the mouth of an extension of the cave, described below. Piper Cave averages 25 feet wide and 12 feet high. From the entrance it trends westward for 400 feet to a fork; on the right is a short, muddy crawlway into which surface water pours when it enters the mouth of the cave in wet weather. The main cave makes a sharp bend to the left and continues S. 55^{o} W. for 220 feet to a second fork. The right branch extends northward for 700 feet to a ceiling collapse; a small hole over the breakdown leads into a room 120 feet long. The left branch is 1,200 feet in length, and its direction varies from S. 25 ^{o} W. to S. 40° W., with a mean azimuth of about S. 25 ^{o} W. The ceiling of this branch is remarkably smooth and level, and the floor varies in height according to the amount of broken rock and dirt which covers it.

Piper Cave is inhabited by a variety of animal life. A large colony of bats, predominantly *Myotis grisescens*, inhabits the cave during the summer months. The cave is the type locality for a species of blind beetle, *Pseudanophthalmus cumberlandus* Valentine. Isopods, amphipods, spiders, springtails, and millipeds are abundant and derive most of their nourishment from the extensive deposits of bat guano.

Across the sink from the main entrance is an extension of the cave (New Piper Cave). The mouth of this section is 4 feet high and 15 feet wide and opens into the side of a large passage which extends east for 300 feet and west for 220 feet. The west branch is comparatively dry, but the east branch contains a wet-weather stream which flows into the mouth of the cave in winter and spring. This stream has trenched a small canyon into the thick silt and gravel fill of the east branch. The cave has rather large cross-sectional dimensions and in places is 35 feet wide and 10 feet high." The total length of mapped

passages is 2600 and 520 feet for Piper and New Piper Caves, respectively (Tennessee Cave Survey, 2003).

Significance – Site Importance High (B3) – The Piper Caves are home to a large summer roost of the state and federally endangered gray bat (*Myotis grisescens*). This species is considered vulnerable and imperiled by the DNA (G3S2). A population of 2,140 gray bats was reported in the summer of 2002 (Harvey, 2002). Previous observations recorded in the DNA Biotics database indicate that this may be a maternity roost once containing as many as 13,100 gray bats. The cave also supports a population of the eastern woodrat (*Neotoma magister*), deemed in-need-of-management. With the presence of woodrats and gray bats, the cave likely supports a diverse assemblage of cave-obligate invertebrates, many of which are extremely rare and narrowly endemic to the region. The cave beetle reported by Barr (1961), *Pseudanophthalmus cumberlandus*, is one such example. This beetle is considered imperiled (G1G2) by NatureServe.

Strategy – The primary concern for the conservation of the gray bat is uncontrolled access. Disturbance of gray bats during roosting periods can significantly reduce colony size, and ultimately drive them away. In addition to protecting an initial five acres around the two cave entrances, the caves may need to be posted to discourage inappropriate access. Other exclusion measures may be necessary. Acquisition of additional acreage will provide for establishment and maintenance of a forested corridor from the entrances towards Peyton Creek, over which the bats may be expected to feed. Ideally, the entire recharge area of the cave will be acquired to protect it from incompatible land uses.

Land Protection Needs – 115 acres at an estimated cost of $125,000.

Potential Partners – TNC, TWRA, USFWS, and TDEC.

PORTER'S BLUFF

Location – (N36.5240, W87.3315) Porter's Buff site is located in Montgomery County east of Clarksville, within the city limits, between Porter's Bluff Lane and the Red River. (See Dunbar Cave SNA map)

Description - Located on the Western Highland Rim, this 76 acre site is a north to northeast-facing bluff and slope rising to approximately 100 feet above the Red River. On the slopes are several rock outcrops, seeps, springs and the rather large Porter's Cave. The slope terminates in a narrow floodplain of recent alluvium along the Red River. The slope and bluff are dominated by various species of oaks, while the floodplain is dominated by boxelder, silver maple, and other typical floodplain species.

Significance – Site Importance Moderate (B4) – This is a small but floristically rich area, especially in diversity of spring wildflowers. The site historically harbored several rare plant species including Appalachian bugbane (*Cimicifuga rubifolia*), spreading false-foxglove (*Aureolaria patula*), Short's rock-cress (*Arabis shortii*), and Clebsch's pocket moss (*Fissidens clebschii*).

In addition to the rich flora at this site, a rare bird has also been documented from Porter's Bluff. Bewick's wren (*Thryomanes bewickii*), was historically observed near Porter's Cave.

Strategy - The strategy for acquisition at Porter's Bluff is to acquire properties within and adjacent to the site design (site boundary) for access or access control, and preservation of rare species and representative communities. Preservation of rare species, communities and wildlife, will provide educational opportunities for the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 67 acres at an estimated cost of $110,500.

Potential Partners – TDEC.

RADNOR LAKE SNA

Location - (N36.0587, W86.8015) Radnor Lake SNA is located on Otter Creek Road in Davidson County

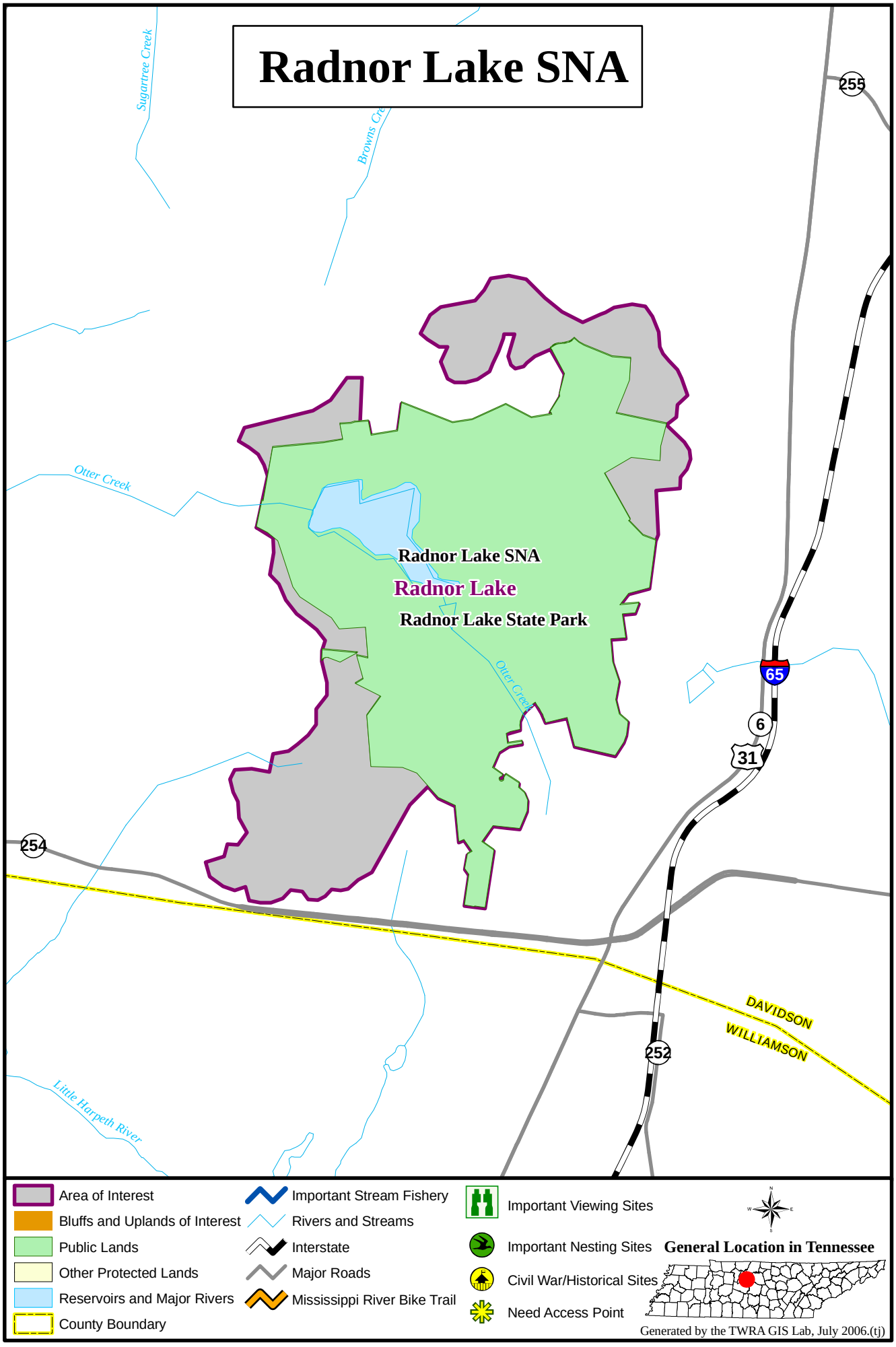
Description - Radnor Lake is a 1,200 acre SNA which preserves beautiful scenery and a diversity of natural habitats. The area was originally developed as a source of water for the Louisville and Nashville steam engines at nearby Radnor Yards. The park is the first official component of the SNA System.

Significance - The 85 acre lake was impounded in 1914 by the Louisville and Nashville Railroad Company to furnish water for steam engines and the livestock at the nearby Radnor Rail Yard. It was also intended to provide hunting and fishing opportunities for L&N employees. The state purchased the area in 1973 with the assistance of federal funds and the generous donations of thousands of concerned citizens. Radnor Lake is one of the largest pockets of wilderness in the United States in close proximity to a major city.

Strategy - The strategy for future acquisitions for Radnor Lake SNA is to acquire properties surrounding the park enhance the wildlife, aesthetics, interpretive and recreation mission of the park.

Land Protection Needs – 107 acres at an estimated cost of $2,590,500.

Potential Partners – TDEC, The Friends of Radnor Lake and other land conservancy groups.


Radnor Lake SNA
Sugartree Creek
Browns Creek
255
Otter Creek
Radnor Lake SNA
Radnor Lake
Radnor Lake State Park
Otter Creek
65
6
31
254
DAVIDSON
WILLIAMSON
252
Little Harpeth River
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
Need Access Point
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

RIDGETOP BARRENS

Location – (N36.3922, W86.7711) This approximately 86-acre site is located in Robertson and Davidson Counties off Plemel Lane. (See Tyree Springs map)

Description - Located in the Outer Central Basin and Western Highland Rim, the site is approximately 86 acres that includes barrens vegetation.

Significance – Site Importance High (B3) – The site includes a barrens community lying on an outcropping of shale of Fort Payne Formation at approximately 265-meter contour near the top of the ridge that forms the east side of a hollow through which passes an L& N Railroad Line. The site also includes an extensive open area with scattered trees and shrubs. Rare elements include *Polytaenia nuttallii* and *Populus grandidentata*.

Strategy - The strategy for acquisition at Ridgetop Barrens is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs –9.6 acres at an estimated cost of $18,000.

Potential Partners – TDEC.

RUTLEDGE FALLS

Location – (N35.4229, W86.1398) This approximately 1.5 acre site in Coffee County is located on Crumpton Creek between Tullahoma and Manchester on Rutledge Falls Road. (See Short Springs Class I Scenic-Recreation SNA map)

Description - Located on the Eastern Highland Rim, the site is about 1.5 acres containing a 30-foot waterfall with exposed limestone, forming a moist/humid microclimate.

Significance – Site Importance Very High (B2) – Rutledge Falls is one of the more beautiful waterfalls in Coffee County, forming as water descends from the Highland Rim into the Central Basin. Its waters originate from Crumpton Creek, which is a tributary of the Duck River (one of the most biologically diverse freshwater ecosystems in the world). Rare elements include: *Marshallia trinervia* (state status: threatened), *Carex hirtifolia* (state status: special concern), *Radula volute* (a liverwort; state status: special concern), *Lejeunea sharpii* (a lichen; state status: endangered), *Parnassia grandifolia* (state status: special concern), *Panax quinquefolius* (special concern, commercially exploited), A rare community: *Quercus rubra – Carya ovata* / *Acer saccharum – Tilia americana* var. *heterophylla* – (*Cladrastis kentukea*) Forest (global rank: G3), and a rare fish: *Hemitremia flammea* (state status: deemed in-need-of-management).

Strategy - The strategy for acquisition at Rutledge Falls is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs –16.7 acres at an estimated cost of $38,000.

Potential Partners – TDEC.

SALT LICK CREEK FOREST

Location – (N36.4848, W85.8516) Salt Lick Creek forest is located in Macon County between the communities of Prosperity and Red Boiling Springs on Salt Lick Creek Road.

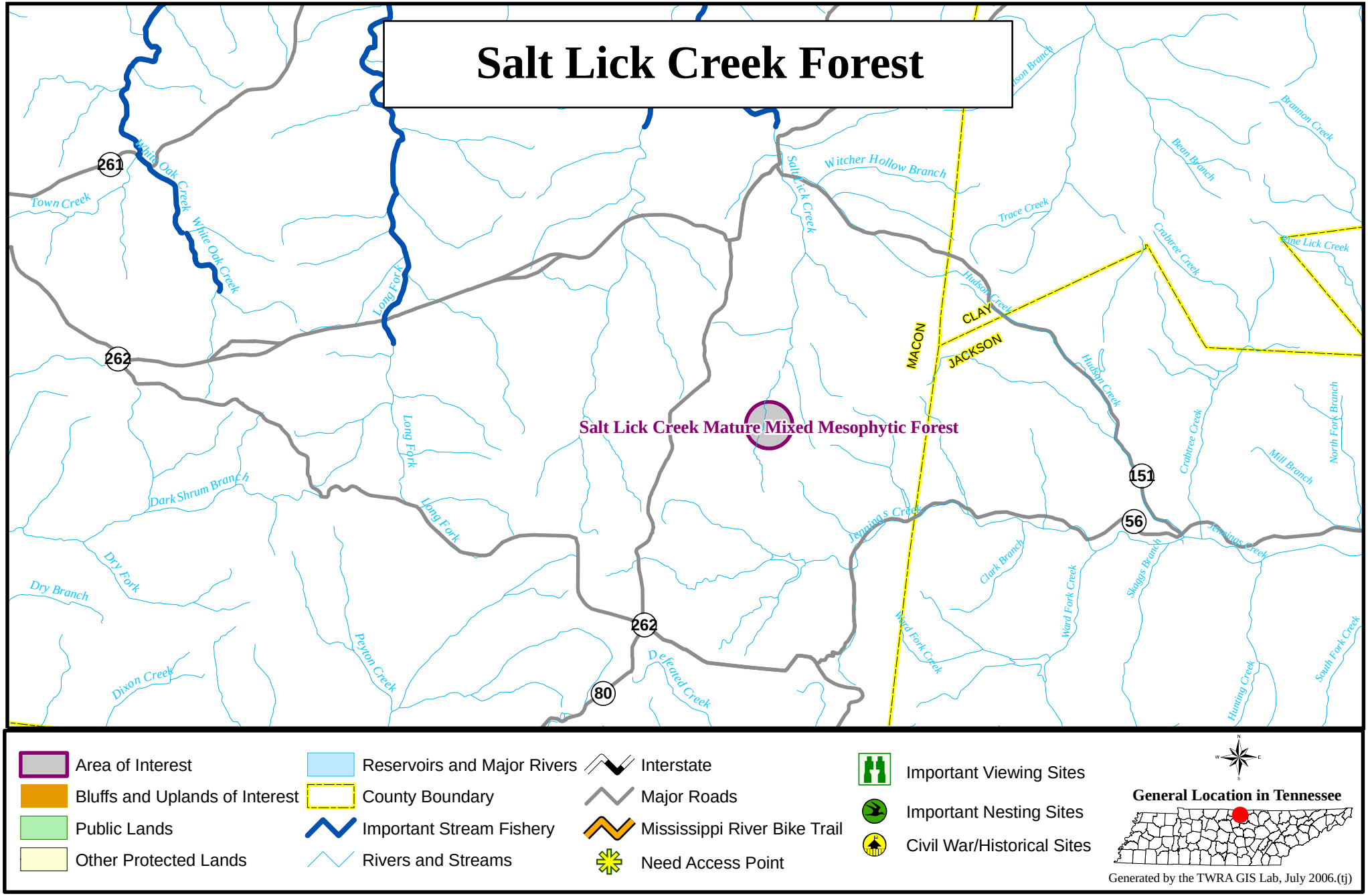
Description - Salt Lick Creek Forest is within the Eastern Highland Rim and the Barren River Watershed. The forest is mature with a diverse mix of mesophytic trees along with bottomland hardwoods along the stream channel. Although no precise species lists are known from the site, one report indicates a rich spring herbaceous flora including trilliums, mayapple, toothworts, and Solomon's seal. The upland slopes above the creek consist of oak-hickory forests. The area provides a fine example of mesic forest and stream bottoms in the Barren River drainage in an area which is comprised of a large quantity of agricultural lands.

Significance – Site Importance Moderate (B4) – Although no rare, threatened, or endangered species are currently known from Salt Lick Creek Forest, protection of the site would provide needed conservation lands in the area. Aside from a few municipal parks and the fairgrounds, there are no public lands known from either Macon County or the Barren River Watershed. The closest public lands to Salt Lick Creek Forest are the USACE lands in Smith County. The protection of Salt Lick Creek Forest would protect the headwaters of Salt Lick Creek, a stream from where the state-listed *Ethostoma barrenense* (splendid darter) is documented.

Strategy – TDEC should conduct a site assessment to further determine this sites features and attributes.

Land Protection Needs – 172 acres at an estimated cost of $187,000.

Potential Partners – TDEC and possibly Macon County and the town of Red Boiling Springs.


Salt Lick Creek Forest
Salt Lick Creek Mature Mixed Mesophytic Forest
261
262
80
151
56
MACON
CLAY
JACKSON
Town Creek
White Oak Creek
Long Fork
Witcher Hollow Branch
Salt Lick Creek
Trace Creek
Hudson Creek
Crabtree Creek
Brannon Creek
Bean Branch
Pine Lick Creek
Dark Shrum Branch
Dry Fork
Dry Branch
Dixon Creek
Peyton Creek
Defeated Creek
Jennings Creek
Clark Branch
Ward Fork Creek
Skaggs Branch
Mill Branch
North Fork Branch
South Fork Creek
Hunting Creek
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

SCALES MOUNTAIN KNOBS SNA

Location – (N35.8369, W86.5708) This approximately 88-acre site is located in Rutherford County off Hwy 96 approximately 11 miles west of Murfreesboro.

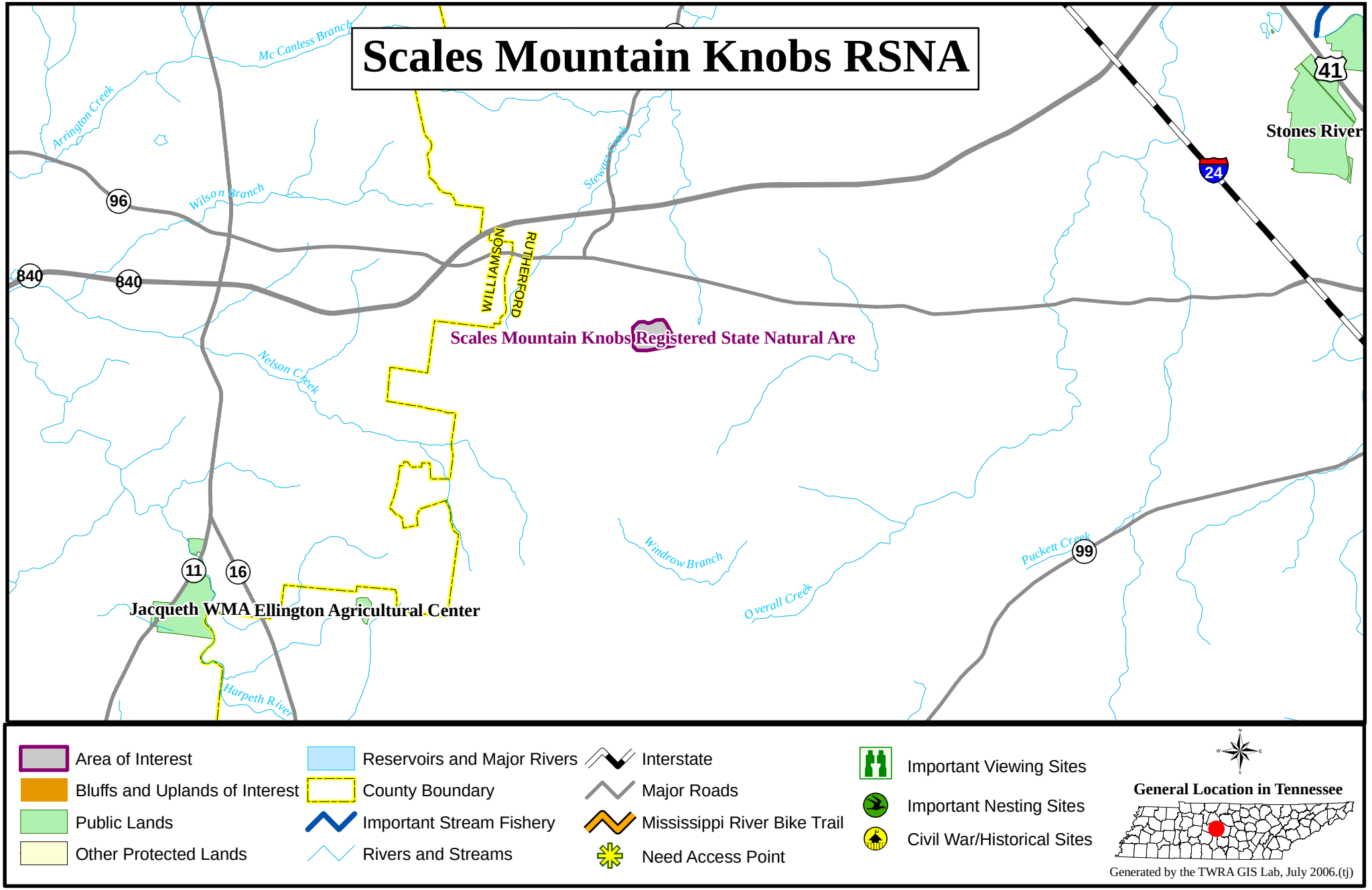
Description - Located on the Central Basin, Scales Mountain. Knobs are a series of three knobs located west of Murfreesboro in western Rutherford County. The knobs range from roughly 850 feet at their base to more than 1190 feet at the top of Scales Mountain, the highest of the three knobs. The knobs are capped by Ordovician limestone belonging to the Leipers and Cathy's Formation. The knobs are almost entirely forested with second growth woods of medium (30-40 years) age. Some light grazing has occurred on small portions of the knobs.

Significance – Site Importance High (B3) – On the southwestern portion of the middle knob, from the ridge at 1,110 feet and extending to the lower slope at 980 feet elevation, occurs a dense, extensive population of Alabama snow-wreath (*Neviusia alabamensis*), a shrub listed as threatened in Tennessee and previously under federal review for listing. This site, along with another recently discovered but much smaller population, represents the first discovery of *Neviusia* in the Central Basin. Two other Tennessee populations for this shrub are known, each on the eastern Highland Rim. The Scales Mountain population represents the largest known Tennessee population and occurs in a patch estimated to measure 200 feet by 700 feet. There are very few associates growing with the *Neviusia* other than a yet undetermined spiderwort (*Tradescantia* sp.) and buckrush (*Symphoricarpos orbiculatus*). The *Neviusia* is growing under an open canopy of hackberry, chinkapin oak, white ash, black locust, sugar maple, and American basswood. Other rare elements include: *Arabis perstellata* (federally endangered) and the rare community: *Quercus muehlenbergii – Q. shumardii – Carya ovata* Forest (G3).

Strategy - The strategy for acquisition at Scales Mountain Knobs Registered SNA is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 87.8 acres at an estimated cost of $142,000

Potential Partners – TDEC and USFWS.


Scales Mountain Knobs RSNA
Mc Canless Branch
Arrington Creek
Wilson Branch
Stewart Creek
WILLIAMSON
RUTHERFORD
Scales Mountain Knobs Registered State Natural Are
Nelson Creek
Windrow Branch
Overall Creek
Puckett Creek
Harpeth River
Jacqueth WMA Ellington Agricultural Center
Stones River
96
840
840
11
16
24
41
99
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

SHORT MOUNTAIN SNA AND SHORT MOUNTAIN SANCTUARY SNA

Location – (N35.8674, W85.9741) Short Mountain is located in Cannon County approximately 10 miles northeast of Woodbury. The SNA is privately owned.

Description - Short Mountain-Jim Cummings Designated SNA is a 500-acre privately owned natural area at the top of Short Mountain in Cannon County. Short Mountain is located on the western margin of the Eastern Highland Rim but is a remnant or outlier of the Cumberland Plateau. It provides a commanding view to the west of the highly dissected edge of the Highland Rim and features of the Central Basin. Its highest point is 2,074 feet above sea level and is underlain on top with Pennsylvania sandstone, the same substrate that caps the Cumberland Plateau. It is a prominent geological feature, regional landmark, and stands about 800 feet above the plain. It is said that on an exceptionally clear day, you can see Nashville some 55 miles to the northwest.

The occurrence of the thick strata of Pennsylvanian rock is evidence that this age rock once extended across the Highland Rim and Central Basin. At lower elevations beneath the capped rock on Short Mountain are limestone formations that create limestone pits, caverns, and sinkholes. Ephemeral upland wetlands provide prime amphibian breeding habitat in the spring. The north and south slopes are richly diverse forests with buckeye, sugar maple, tulip poplar, walnut, beech, and black gum trees. These forests also support many species of hickories and oaks with redbud, southern black haw, and flowering dogwood trees in the understory. In less rich soils, chestnut oak is dominant with blueberries (*Vaccinium* spp.) in the shrub layer.

Significance – Site Importance Moderate (B4) – Rare elements include animals such as *Sorex hoyi*, *S. longirostris*, and *Zapus hudsonius*. Rare plants include *Panax quinquefolius*, *Lilium canadensis*, and one rare community: *Quercus prinus – Quercus alba* (*alba, coccinea, velutina*) / *Viburnum acerifolium –* (*Kalmia latifolia*) Forest (G4?)

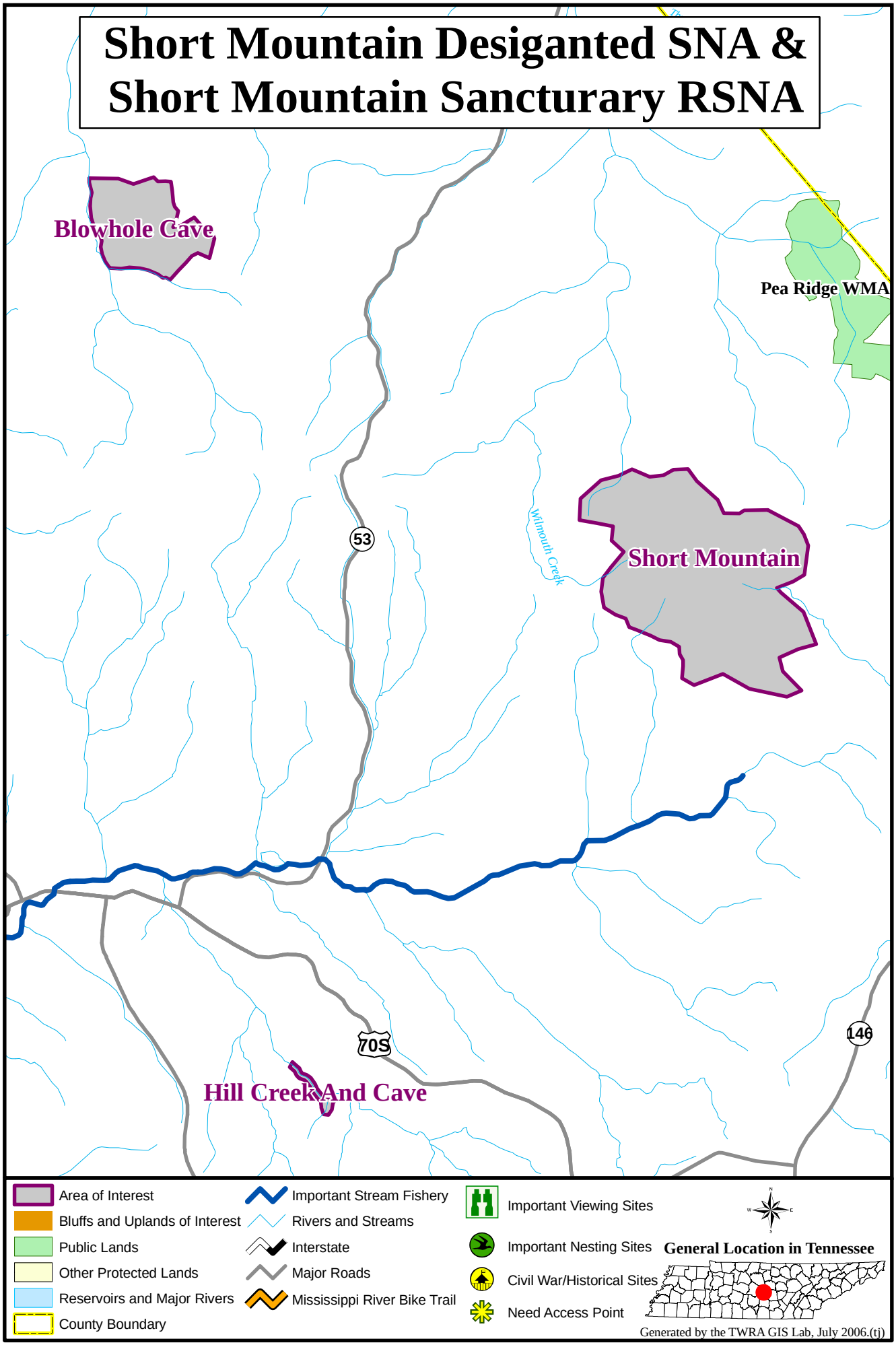
Rare elements specific to Short Mountain Sanctuary Registered SNA include *Caulophyllum giganteum*, *Panax quinquefolius*, *Juglans cinerea*, and one rare community: *Quercus rubra – Carya ovata* / *Acer saccharum – Tilia americana* var. *heterophylla* – (*Cladrastis kentukea*) Forest (G3)

Strategy - The strategy for acquisition at Short Mountain is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Preservation of these rare species will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 1,643 acres at an estimated cost of $1,768,000.

Potential Partners – TDEC, Short Mtn. Sanctuary, Inc., and Short Mtn. Bible Camp.

Short Mountain Desiganted SNA & Short Mountain Sancturary RSNA



SHORT SPRINGS SNA

Location – (N35.4100, W86.1804) Short Springs is located on the Eastern Highland Rim in Coffee County about 3.5 miles northeast of Tullahoma.

Description - Short Springs is a 420-acre natural area, which provides an excellent contrast between Highland Rim and Central Basin geology and vegetation. This biological diversity is related to the rich forest slopes and ravines, low cascades, springs and waterfalls that support it. Scenic features include Machine Falls which drops more than 60 feet and is nearly equal in length across. The Upper and Lower Busby Falls on Bobo Creek are two prominent cascading waterfalls that can be seen from overlooks on the Bobo Creek trail. The steep escarpment with its numerous wet weather seeps is particularly impressive during the moist winter and spring months. Thickets of mountain laurel grow on the upper slopes under a dry oak–hickory forest canopy that is characteristic of Highland Rim vegetation. The lower slopes and riparian areas along Bobo Creek support towering sycamore, buckeye, magnolia, beech, and tulip poplar trees with a rich shrub layer and herbaceous cover.

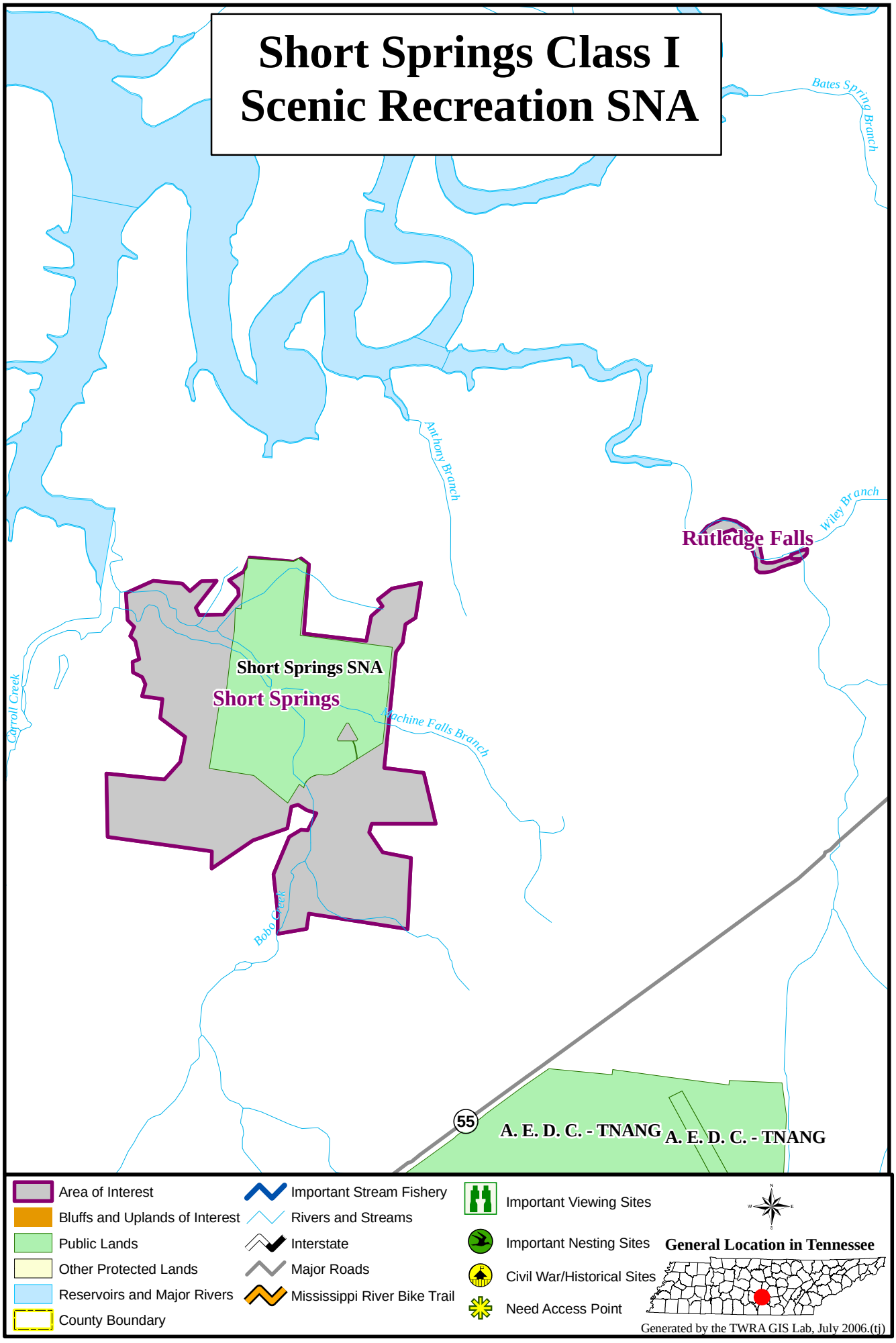
Significance: - Site Importance High (B3): Short Springs is one of the very best spring wildflower locations in the state. In the spring, moist slopes are covered in trout lilies, Virginia bluebells, jack-in-the-pulpit, larkspur, and Dutchman's breeches. Large flowered trillium (*Trillium grandiflora*), southern red trillium (*Trillium sulcatum*), and barren strawberry (*Waldsteinia fragarioides*) are uncommon plants for Middle Tennessee that occur here. The natural area also supports two state-listed endangered plant species, Nestronia (*Nestronia umbellula*) and broad-leaved bunchflower (*Melanthium latifolium*).

Strategy - The site conservation plan proposes acquisition of surrounding forest that is contiguous with Short Springs to increase its size and provide greater buffer and protection of the natural area. Completion of this project would increase the size of the area to 1,115 acres.

Land Protection Needs - 695 acres at an estimated cost of $825,000

Potential Partners - TVA, Friends of Short Springs, and the City of Tullahoma, and TDEC.

Short Springs Class I Scenic Recreation SNA



SMITH GLADE

Location – (N35.6617, W86.7983) Smith Glade is located in the northeastern section of Marshall County approximately 2 miles east of Rally Hill and is just southwest of the intersection of Moses and Wilson School Roads. (See Duck River Habitat Corridor and State Scenic River map)

Description – Smith Glade consists of limestone cedar glades, with a wet weather conveyance, and dry woodlands forested in part by small, perhaps stunted, red cedar-blue ash trees (NatureServe Classification of *Fraxinus quadrangulata- Juniperus virginiana* woodland alliance). Additional woody plants include winged elm, glade privet, and aromatic sumac. The surface of the glade is open limestone with small pockets of herbaceous vegetation while the cedar-blue ash woodland has a thick moss cover and a rich, yet thin soil layer. Some plants observed during a spring visit include cedar glade St. Johnswort, twoflower melic grass, rue anemone, columbine, and trillium.

Significance – Site Importance Very High (B2) – There are three rare plants known from Smith Glade including running glade clover (*Trifolium calcaricum*), Carolina anemone (*Anemone caroliniana*), and glade cress (*Leavenworthia exigua* var. *exigua*). Running glade clover was first discovered by Leo Collins, botanist with TVA in 1979. A few years later he and another botanist from Virginia, Tom Wieboldt, found the species in Virginia and then described it as new to science. World-wide there are only seven known occurrences of this species, and although two occurrences are within a Virginia SNA, no Tennessee populations are protected. Running glade clover is truly a rare species and has been searched for at length by DNA botanists. The species is considered globally imperiled (G1) and is listed state endangered. Although common globally, Carolina anemone is considered imperiled in Tennessee (S1) and is listed state endangered. Currently there are only eight extant occurrences of Carolina anemone, all within just a few Tennessee counties within the Central Basin Physiographic Province. The particular variety of glade cress at Smith Glade is considered rare throughout its range.

Strategy - The strategy for acquisition at Smith Glade is to preserve enough of the site to at least protect running glade clover, a species which could easily be extirpated from Tennessee. The full range of the species in and around Smith Glade needs to be delineated.

Land Protection Needs – 130 acres at an estimated cost of $209,000.

Potential Partners – TDEC and USFWS.

SOUTH BERLIN GLADE

Location – (N35.5081, W86.8233) South Berlin Glade is approximately 46 acres located in Marshall County 0.6 miles northeast of the community of South Berlin. (See Duck River Habitat Corridor and State Scenic River map)

Description - Located in the Central Basin, South Berlin glade is a long, thin stretch of dry wash that supports a healthy leafy prairie-clover (*Dalea foliosa*) population. Intermediate woods and small gladey patches surround the wash, scattered among clumps of cedar, white ash, upland swamp privet, and fragrant sumac. The site is intersected by a north-south powerline right-of-way. A fence runs along part of the site's north side, but other than this structure, the site is fairly pristine.

Significance – Site Importance Moderate (B3) – South Berlin Glade supports a healthy population of leafy prairie-clover, which is federally endangered and carries a Global Rank of G2G3 and a State Rank of S2S3, meaning that it is very rare and imperiled globally as well as in of Tennessee. At last visit (1993), over 100 plants were thriving on site. The site also provides habitat for limestone fame-flower (*Talinum calcaricum*), which is listed as state special concern.

In 1993, TDEC contracted with TNC to develop a preserve design for South Berlin Glade and to initiate landowner contact to ascertain landowner attitude about and potential involvement in future conservation efforts of this site. At that time, one landowner expressed interest in selling his tract of land if the price was right, while the primary landowner expressed no interest in conservation of the *Dalea* population or in selling his property.

Strategy - The strategy for acquisition at South Berlin Glade is to acquire properties within and adjacent to the site design (site boundary) for access or access control, and preservation of rare species and communities. Preservation of these rare species and communities will provide educational opportunities for the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 46 acres at an estimated cost of $52,000.

Potential Partners – TDEC and TNC

SOUTHWESTERN HIGHLAND RIM PROJECT

Location – The Southwestern Highland Rim Project area is located on the Western Highland Rim in Perry, Wayne, Hickman, and Lewis counties, approximately sixty to eighty miles southwest of Nashville.

Description – This project area is predominantly hardwood forest interspersed with stands of southern yellow pine and habitats ranging from early successional to mature timber. The topography is characteristic of the Western Highland Rim with rolling uplands to narrow bottomlands bisected by numerous small streams. Past and current use is forested land managed for forest products.

Significance - These lands currently support a diverse avian community with varying ecological needs. Ten of the twenty highest priority bird species of the Interior Low Plateau Physiographic Region as ranked by Partners in Flight are found within this project area, including the yellow-billed cuckoo, wood thrush, prairie warbler, field sparrow, eastern wood-pewee, red-headed woodpecker, blue-winged warbler, worm-eating warbler, Louisiana waterthrush, and Kentucky warbler.

Two reptile species listed as threatened by the State are found in this area, the northern pine snake and the western pigmy rattlesnake.

Many of the blocks of the Southwestern Highland Rim Project land in Perry, Wayne, and Lewis counties fall within the focus areas of the Central Hardwoods Joint Venture. This designation is designed to focus national and regional attention and resources on these critical habitats to protect existing bird habitats and enhance other habitats, where possible, to improve the status of bird populations.

The Southwestern Highland Rim Project provides excellent habitat for a wide variety of wildlife, producing thriving populations of hunted and non-hunted animals. Hunting opportunities on Southwestern Highland Rim Project attract thousands of people each year producing significant harvests of white-tailed deer and wild turkey. Small game species also attract significant numbers of hunters.

The Southwestern Highland Rim Project in Lewis and Maury County have rare plant species such as the federally threatened Eggert's sunflower and state-listed Michigan lily, large-leaved grass-of-Parnassus, broad-leaved Barbara's buttons, beaked trout lily, butternut, and American ginseng. The area has critical habitat (calcareous seeps) for possible restoration of federally endangered Tennessee yellow-eyed grass.

Aquatic resources on and adjacent to the Southwestern Highland Rim Project are diverse and significant. There are scenic waterfalls, streams, springs and seeps. They include the headwaters of Big Swan Creek and Big Bigby Creek, which are the sources of water supply for Centerville and Mt. Pleasant, respectively, and provide clean groundwater recharge for public and private well water in the Summertown region. Most of these

properties are in the watersheds of the Buffalo River and lower Duck River and contribute to the water quality of these watersheds.

The Duck River is the most biologically diverse river in the US. It supports a significant sport fishery and is excellent habitat for smallmouth bass, rock bass, largemouth bass, and various species of catfish. The Duck also supports the greatest diversification of freshwater mussels (55 taxa) in Tennessee.

The Buffalo River is listed as one of Tennessee's Wild and Scenic Rivers, and it has become a highly utilized resource for water-borne recreation. Canoe liveries, campgrounds, and outfitters have sprung up along its length in recent years; and hundreds of people from that region float, fish, and recreate on the river weekly. The Buffalo is a major smallmouth bass, rock bass, and spotted bass fishery.

Although the Southwestern Highland Rim Project is very ecologically diverse, this area is also critical for public recreation. Middle Tennessee has the smallest public land base for recreation of any region in Tennessee even though Nashville has one of the largest human populations in the state. TWRA has identified in its Strategic Plan a number of outdoor recreational issues. Maintaining the Southwestern Highland Rim Project for public use will assist in resolving some of the following problems, issues and strategies:

Streams – There are approximately 250,000 stream and river anglers in Tennessee and Middle Tennessee provides a lot of fishing opportunity for these anglers.

- Problem – Many anglers are not fishing streams and rivers because there is not enough access.
- Strategy - Improve fishing access to streams and river by providing 80 new sites by 2006.

Deer – There are approximately 225,000 deer hunters in Tennessee who harvest over 160,000 deer. Middle Tennessee contributes significantly to the total deer harvest in Tennessee.

- Problem – There is a potential for reduced growth in number of hunters brought about by lack of access, urbanization, average property size getting smaller, increasing land prices, and the increasing costs of hunting.
- Problem – There are fewer places to hunt and it is becoming more difficult to gain access to hunting lands.
- Strategy – Open additional lands for public hunting through acquisition, leases and other means.

Wild Turkey – There are approximately 65,000 turkey hunters in Tennessee who harvest over 32,000 turkeys. The majority of that harvest occurs in Middle Tennessee.

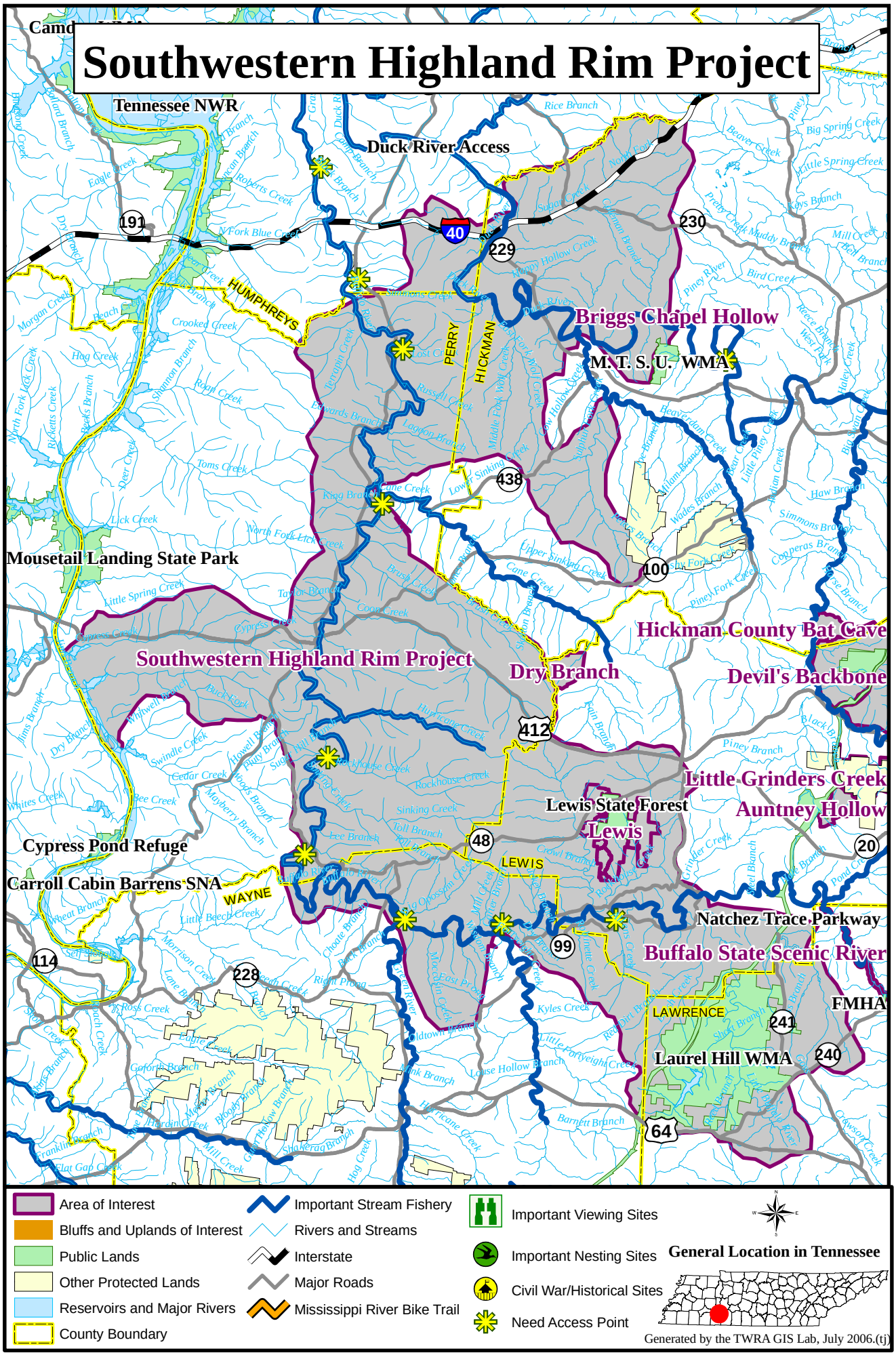
- Problem – Some hunters have difficulty gaining access to private land and do not have a place to turkey hunt.

- Strategy – Acquire additional areas with wild turkey habitat (Wildlife Management Areas, Public Hunting Areas, etc) to protect turkey habitat and give hunters a place to hunt turkeys in the future.

The preceding wildlife related activities contain strategies (providing, maintaining, expanding hunting/fishing opportunities) already listed within the TWRA Strategic Plan. Maintaining access to lands has been considered a key strategy for other similar sport oriented programs as well as for programs geared more towards individuals who engage in wildlife viewing.

Land Protection Needs – 86,375 acres at an estimated cost of $58,797,400. The sale of this land is indicative of a recent trend of large-scale divestiture of lands by large industrial forest landowners across the southeast. It appears that this divestiture trend will result in more, but smaller tracts, increased development, and a general loss of opportunity to protect these lands in the future. While there are more than 170,000 acres owned by a single landowner that may be for sale, TWRA has identified 86,375 acres in four tracts as being the most critical for protection

Potential Partners – TWRA. Forest Legacy, Swan Conservation Trust, and TNC. TCF may initiate activities to assist in this acquisition should it become an active project.


Southwestern Highland Rim Project
Tennessee NWR
Duck River Access
Briggs Chapel Hollow
M. T. S. U. WMA
Mousetail Landing State Park
Hickman County Bat Cave
Southwestern Highland Rim Project
Dry Branch
Devil's Backbone
Little Grinders Creek
Auntney Hollow
Lewis State Forest
Lewis
Cypress Pond Refuge
Carroll Cabin Barrens SNA
Natchez Trace Parkway
Buffalo State Scenic River
FMHA
Laurel Hill WMA
HUMPHREYS
PERRY
HICKMAN
WAYNE
LEWIS
LAWRENCE
191
40
230
229
438
100
412
48
20
99
114
228
241
240
64
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
Need Access Point
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

SPRING CREEK BOTTOMS AND GLADES

Location – (N36.2760, W86.2724) Spring Creek Bottoms and Glades is located in Wilson County approximately 5 miles north of Lebanon on Hwy 141 and Hwy 231.

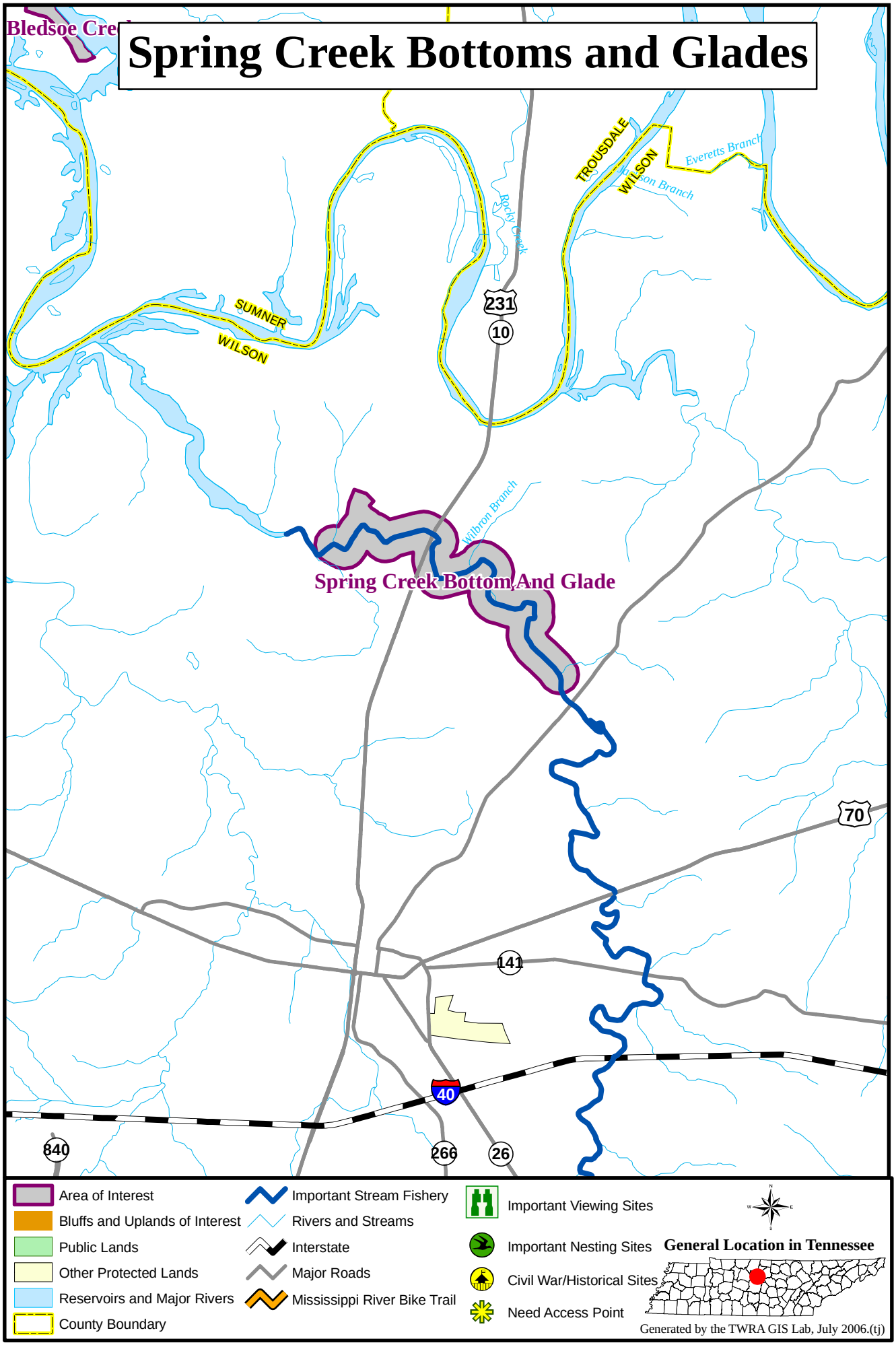
Description – The site encompasses approximately 1500 acres along Spring Creek. Exact delineation of high quality occurrences of rare plants would reduce the size of the conservation target. The area includes riparian forested areas, agricultural fields, pastures, and small limestone outcropping or glades which form shelves or small cliffs above Spring Creek.

Significance – Site Importance Outstanding (B1) – In the early 1950s, Vanderbilt professor Dr. Elsie Quarterman sent some interesting specimens of the genus *Lesquerella* (bladderpod) to Dr. Reed Rollins, director of the Gray Herbarium, Harvard and an expert in the Brassicaceae (mustard family). These specimens caught Dr. Rollins' attention and he and his wife made a collecting trip along Spring Creek in 1955 which resulted in Dr. Rollins describing a new species of bladderpod, *Lesquerella perforata*. *L. perforata* (Spring Creek bladderpod) occurs throughout this stretch of Spring Creek. The significance of this site based upon this species cannot be overstated. *L. perforata* is a federally endangered plant which is considered extremely rare and critically imperiled globally (G1). The entire known-range of this species has a radius of less than 5 miles and it is known only near Spring Creek, Barton's Creek, and Cedar Creek, Wilson County. Spring Creek bladderpod is an annual plant with water distributed seeds which requires soil disturbance in order to grow. The plant does best when the area is cultivated at the proper time of year, while conversion of lands to pasture reduces the number of plants. Since the plant is an annual, the exact locations of occurrences can change from year to year. For other locations of Spring Creek bladderpod, botanists with DNA have witnessed degradation due to development and top soil removal.

Strategy - The first strategy would be to survey and delineate the range of Spring Creek bladderpod and develop a more specific site design which not only includes the current range of the species along Spring Creek but adjacent habitats which could support the plants.

Land Protection Needs – 1,500 acres (perhaps less) at an estimated cost of $1,625,000.

Potential Partners – TDEC and USFWS.


Spring Creek Bottoms and Glades
Bledsoe Cre
TROUSDALE
WILSON
Everetts Branch
Rocky Creek
SUMNER
WILSON
231
10
Wilbron Branch
Spring Creek Bottom And Glade
70
141
40
840
266
26
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
Need Access Point
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

STILLHOUSE HOLLOW FALLS SNA AND RATTLESNAKE FALLS

Location – (N35.4616, W87.2736 and N35.4485, W87.2601, respectively) Stillhouse Hollow Falls and Rattlesnake Falls are located in southwestern Maury County just northeast of Summertown on a tributary to Big Bigby Creek.

Stillhouse Hollow Falls (Site Importance Moderate - B4) is an approximately 75-foot high waterfall on an unnamed tributary to Big Bigby Creek. Big Bigby Creek is a major tributary to the Duck River, a designated State Scenic River and one of the most biologically rich rivers in North America. The falls are an unusually attractive semi-cascading waterfall with both a cascade and sheer drop into a plunge pool at its base. The wet walls of the bowl-like formation at the base of the falls are covered with mosses and ferns, while wildflowers adorn the slopes in spring, summer, and fall. Preliminary botanical surveys reveal a rich and diverse area. The spectacular bluff over which the falls plunge is undercut, making it possible to walk through a fern garden to stand behind the falls. Stillhouse Hollow Falls is often called the twin to nearby Rattlesnake Falls, and is one of the largest waterfalls west of Fall Creek Falls. It is remote and secluded from view, and is only accessible by trails. Most of the area is deciduous hardwood forest. In 2006 approximately 90 acres were acquired by the State and designated as a SNA.

Stillhouse Hollow Falls is just east of several large private conservation managed tracts owned by The Farm, the Swan Conservation Trust, and Weyerhaeuser. The site provides habitat for at least one state listed plant species, the large-leaved grass-of-Parnassus (*Parnassia grandifolia).* It is also significant for an unusual occurrence of oak leaf hydrangea dominating the understory on some of the slopes. This area was identified in the 1930s by TVA and proposed for acquisition as part of Maury State Forest. It was described in *Scenic Resources of the Tennessee Valley* as "a project essential to protect the watershed of the Mount Pleasant municipal water supply. The forest has distinct and useful recreational possibilities, for it might supply needed camp and picnic facilities for several nearby towns. As a game refuge it would serve to replenish the wildlife on adjacent property".

The falls is less than one-half mile away from Rattlesnake Falls. At 75 feet in height, the falls combine the character of cascade and sheer drop, and have a pleasant setting on a rocky hillside covered with profuse growth. In contrast to the rich and moist habitats along the creek above and below the falls, the site also contains very dry and steep ridges running parallel to the creek. These xyric ridges provide additional habitat types and afford scenic vistas over the Big Bigby Valley below.

Rattlesnake Falls (Site Importance Very High - B1) is approximately 350 acres and includes a 60-foot waterfall with exposed limestone on an unnamed tributary to Falls Creek, where it cascades into a plunge pool forming a moist/humid microclimate at its base. The site includes relatively undisturbed upland and ravine forests.

Rattlesnake Falls is a biologically rich area from which over 605 taxa of plants have been documented, including the state listed Eggert's sunflower (*Helianthus eggertii*)(G3) and

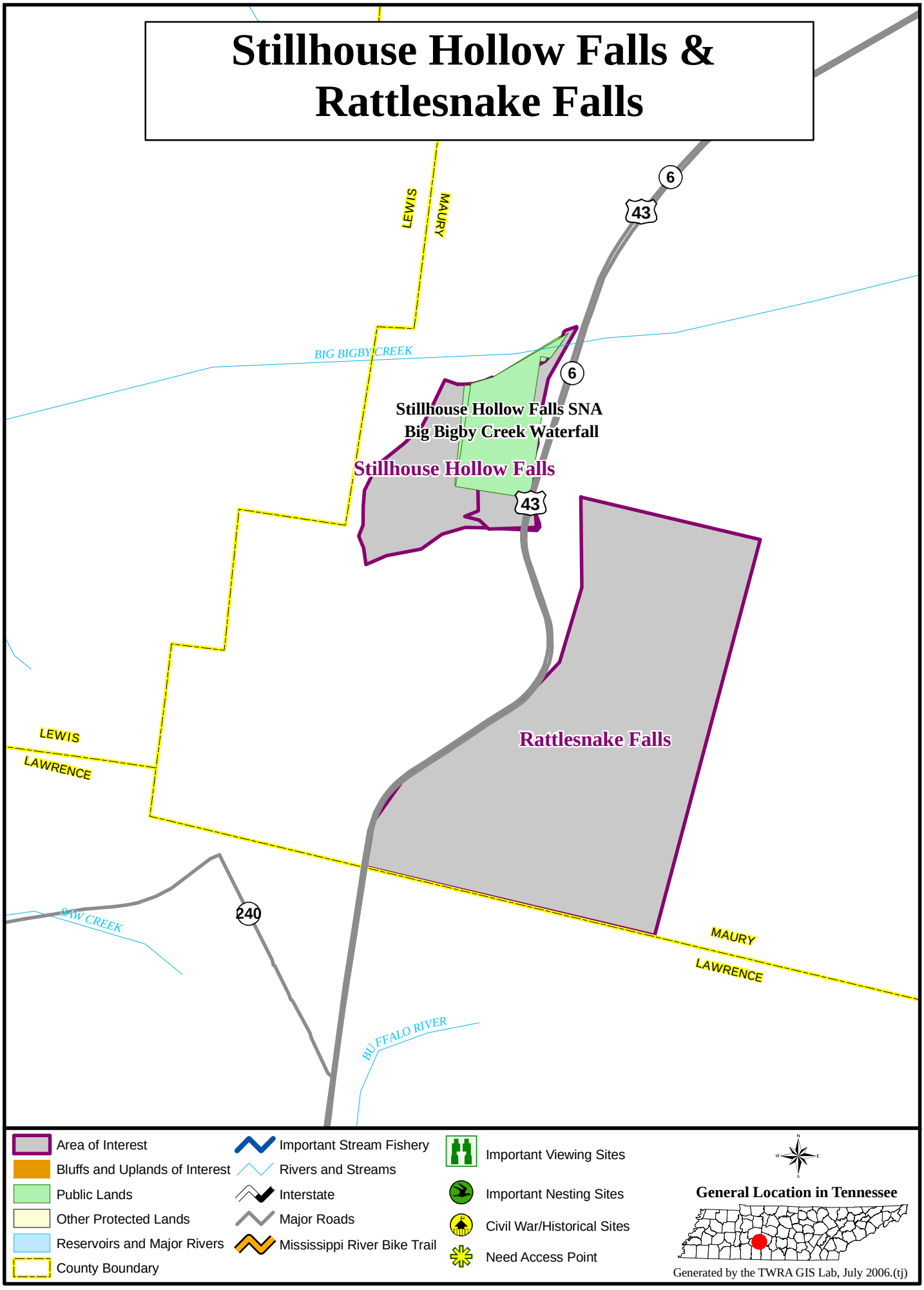
the federally listed Price's potato bean (*Apios priceana*)(G2). Other state listed plants include: Michigan lily (*Lilium michiganense*), butternut (*Juglans cinerea*), sky-blue aster (*Aster oolentangiensis*), American chestnut (*Castanea dentata*), Ozark downy phlox (*Phlox philosa spp. Ozarkana*), and large-leaved grass-of Parnassus (*Parnassia grandiflora*). In 1991 the Tennessee Senate passed a Joint Resolution calling on the Commissioner of TDEC to initiate a study into the feasibility of purchasing Rattlesnake Falls and designating it as a SNA. The site includes two narrow gorges each drained by an unnamed creek, three small creeks that merge into one just above the falls, steep slopes with rock outcrops and small bluffs, and two small caves.

Strategy - The strategy for acquisition at these areas is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation rare species and representative communities.

Land Protection Needs – Stillhouse Hollow Falls - 897 acres at a cost of $1,345,500: Rattlesnake Falls - 238 acres at an estimated cost of $357,000.

Potential Partners – TDEC-DNA, TPGF, USFWS, and Maury County Parks and Recreation

Stillhouse Hollow Falls & Rattlesnake Falls



SULLENGER BEND SNA

Location – (N35.1389, W86.3567) This approximately 3-acre site is located in Moore County about five miles southeast of Lynchburg. (See Lincoln County Bat Cave map)

Description - Located on the Outer Nashville Basin, the steep, east-facing slope of Sullenger Bend along the Elk River is the site of the recent discovery of *Neviusia alabamensis* (snow wreath) in Tennessee. This large population of *Neviusia*, a rare shrub in the rose family, was originally sited by Mr. Dennis Horn while floating the Elk River in 1972. The identity of this showy shrub was not known until 1979, when Dennis Horn ran across a photograph of the plant in an Alabama wildflower guide.

Significance – Site Importance Very High (B2) –: Snow wreath (state threatened), formally proposed for federal threatened status, was originally discovered along the Black Warrior River in Alabama in 1857 and for many years was thought to be endemic to Alabama. However, several additional populations have since been reported from Missouri, Arkansas, and from Tennessee.

The Tennessee population is a large one consisting of a dense thicket of plants extending one hundred yards in a band 40-90 feet above the river. Local soil scientists indicate that this *Neviusia* population is growing on Dellrose soil, a deep, cherty silt loam over St. Louis limestone. Soil analysis indicates that this soil has a pH of around 7.6. The forest canopy is composed almost entirely of hardwoods with some of the species being basswood, yellow buckeye, black walnut, box elder, ash and eastern red-cedar.

Strategy - The strategy for acquisition at Sullenger Bend Registered SNA is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 2.7 acres at an estimated cost of $20,000

Potential Partners – TDEC.

SUMMITVILLE MOUNTAIN SPRING

Location – (N35.5539, W85.9849) Summitville Mountain Spring is located in Coffee County approximately one mile southeast of Summitville on the north side of Hwy 55.

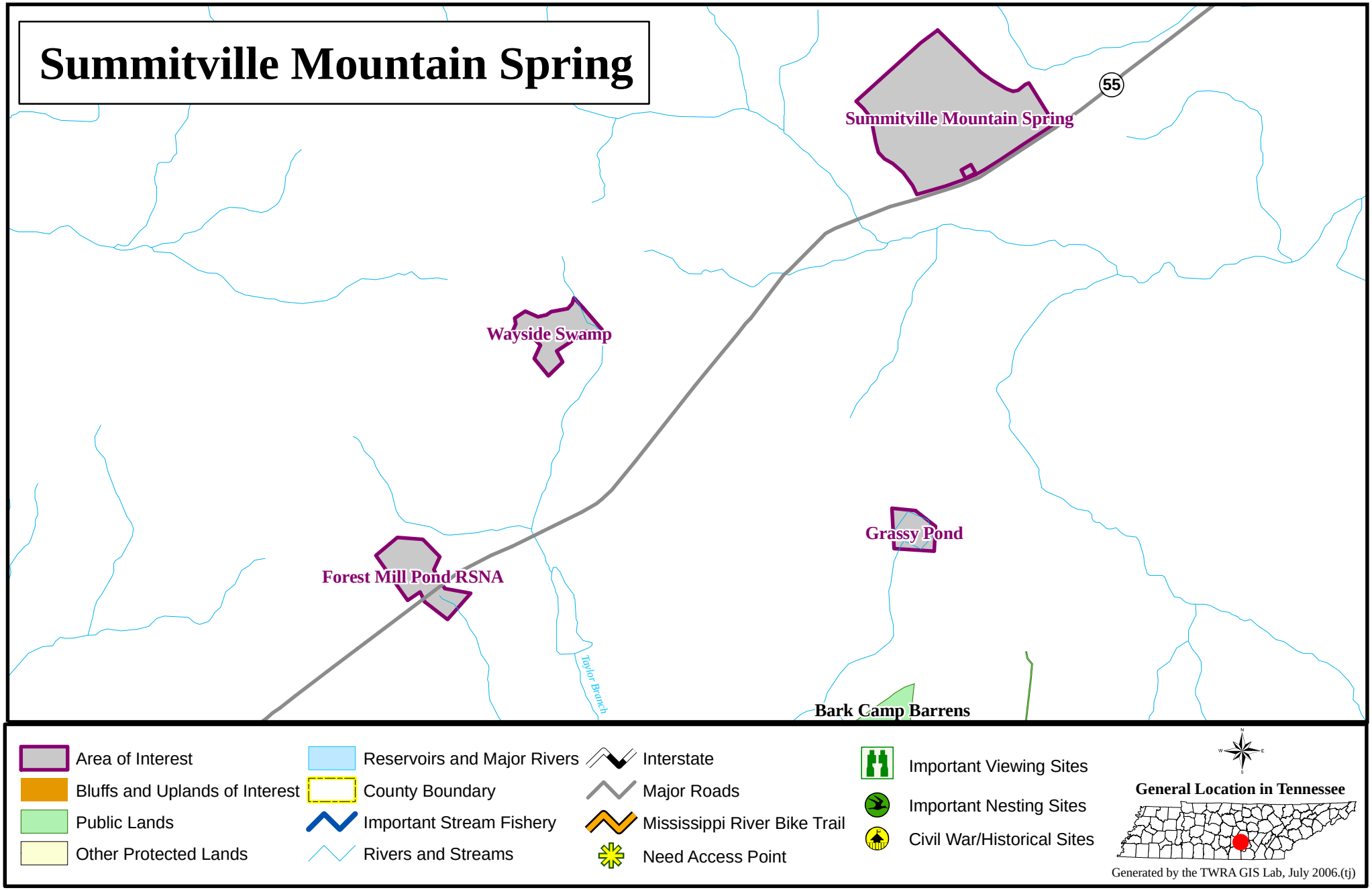
Description – According to Keefer (1994): "The spring pond is slightly oval in shape and occupies less than a quarter-acre of the front yard. The house sits uphill from the water and is well screened from the pond by trees and bushes. A spring coming out of Summitville Mountain Cave (the cave mouth is also in the front yard) forms the pond. At the south end of the pond there is a spillway that dumps excess water underneath Hwy 55. The water level can range from just inches to 3 feet or so at the pond's middle, depending upon the season. Decorative trees, flowering plants and ornamental benches surround the pond, the biggest tree being a weeping willow on the pond's west bank. The pond's banks are stabilized with rocks." The area around Summitville Mountain Spring is mostly residential with a few larger agricultural tracts.

Significance – Site Importance Very High (B2) - Rare species on site include the barrens topminnow (*Fundulus julisia*), redband darter (*Etheostoma luteovinctum*), barrens darter (*E. forbesi*), and flame chub (*Hemitremia flammea*). This site is the type locality and was once believed to be the last remaining habitat for the barrens topminnow (G1S1). This fish has since been found in several other Tennessee locations, but it is still considered extremely rare and sensitive. During a drought in 1999 all topminnows were rescued prior to drying of the pond, and were subsequently returned after water levels had stabilized (Biotics database, 2006).

Strategy - Although TNC, TWRA, USFWS, and Conservation Fisheries maintain regular contact with landowners, Summitville Mountain Spring could be impacted by activities off-property. These include alterations to adjacent Hwy 55, poor land use practices in the immediate vicinity, and direct impacts to the recharge area of the spring. An abandoned quarry on the west side of Summitville Mountain drains directly to the spring, and at least one passageway may be traversed from the quarry to the mouth of Summitville Mountain Cave. In 1994 TNC, TWRA, and the landowner entered into a non-binding CMA, but this provides no protection for offsite land use. In order to better safeguard the site, the entire recharge area for the spring must be evaluated for conservation action, including livestock fencing, restoration of native trees along stream corridors and sinkholes, conservation easements, and fee simple acquisition of properties in the watershed. Special attention must be paid to the abandoned quarry. Dye tracing should be used to determine water sources for the spring resurgence, minimum flow requirements to support its fishes, and the extent of permissible maximum withdrawals from its aquifer. The TDOT should evaluate storm water controls for that portion of Hwy 55 that drains to the spring and associated creek,

Land Protection Needs – 291 acres at an estimated cost of $315,000.

Potential Partners – TNC, USFWS, TWRA, TDOT, TDEC, and Conservation Fisheries.


Summitville Mountain Spring
55
Summitville Mountain Spring
Wayside Swamp
Grassy Pond
Forest Mill Pond RSNA
Taylor Branch
Bark Camp Barrens
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

SUNNYBELL GLADE SNA

Location – (N35.9607, W86.4365) Sunnybell Glade is located in Rutherford County 12 miles north of Murfreesboro. The site is privately owned; access by the public is not permitted.

Description - Located on the Central Basin, Sunnybell Cedar Glade is a 36-acre natural area located in the Central Basin. This site supports a rare assemblage of glade endemic plant species found only at a small number of other locations in Middle Tennessee.

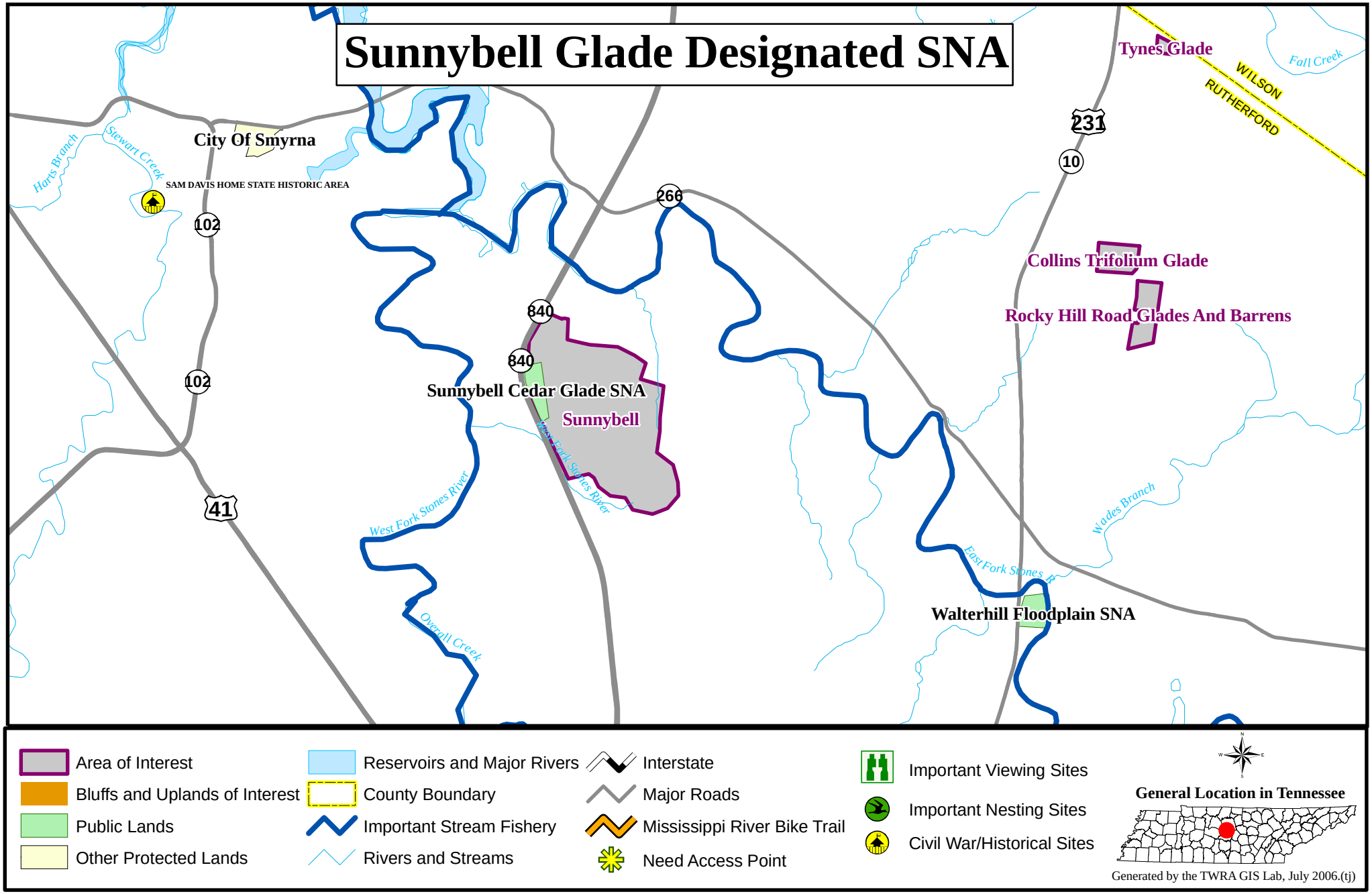
Significance – Site Importance Very High (B2) – The natural area is named for the sunnybells (*Schoenolirion croceum*) that are prominent in wet calcareous limestone washes of cedar glades. In springtime the sunnybells flower profusely and create a remarkable sight. Other rare plants that have been identified from this site include glade cleft phlox (*Phlox bifida* ssp *stellaria*), Tennessee milk-vetch (*Astragalus tennesseensis*), evolvulus (*Evolvulus nuttallianus*), and pale umbrella-wort (*Mirabilis albida*).

Cedar glades are characterized by openings in cedar-oak-hickory forest where the soil is very shallow, and often associated with karst topography. Growing conditions in these glades are very harsh, and only a few highly specialized plants adapt to these conditions. Even the more common tree species that occur in glade ecosystems like red cedar, hackberry, southern shagbark hickory and the various oaks are stunted. Like many other cedar glades of Middle Tennessee, Sunnybell Cedar Glade is underlain by Lebanon limestone formations deposited during the Ordovician Period about 500 million years ago. This is karst topography with little relief as characterized by exposed limestone outcroppings.

Strategy - The strategy for acquisition at Sunnybell Glade is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 705 acres at an estimated cost of $1,137,000.

Potential Partners – TDEC and TNC


Sunnybell Glade Designated SNA
Tynes Glade
Fall Creek
WILSON
RUTHERFORD
231
10
City Of Smyrna
Harts Branch
Stewart Creek
SAM DAVIS HOME STATE HISTORIC AREA
102
266
Collins Trifolium Glade
Rocky Hill Road Glades And Barrens
840
840
Sunnybell Cedar Glade SNA
Sunnybell
West Fork Stones River
102
41
West Fork Stones River
Wades Branch
East Fork Stones R
Overall Creek
Walterhill Floodplain SNA
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

TAYLOR HOLLOW SNA

Location – (N36.5269, W86.2236) Taylor Hollow is located in Sumner County approximately 10 miles north of Gallatin.

Description - Taylor Hollow is a 173-acre natural area located on the Western Highland Rim and is owned by TNC. It is a botanically rich and a biologically diverse area that is one of only a very few areas remaining like this in Middle Tennessee that has been minimally impacted by human activity.

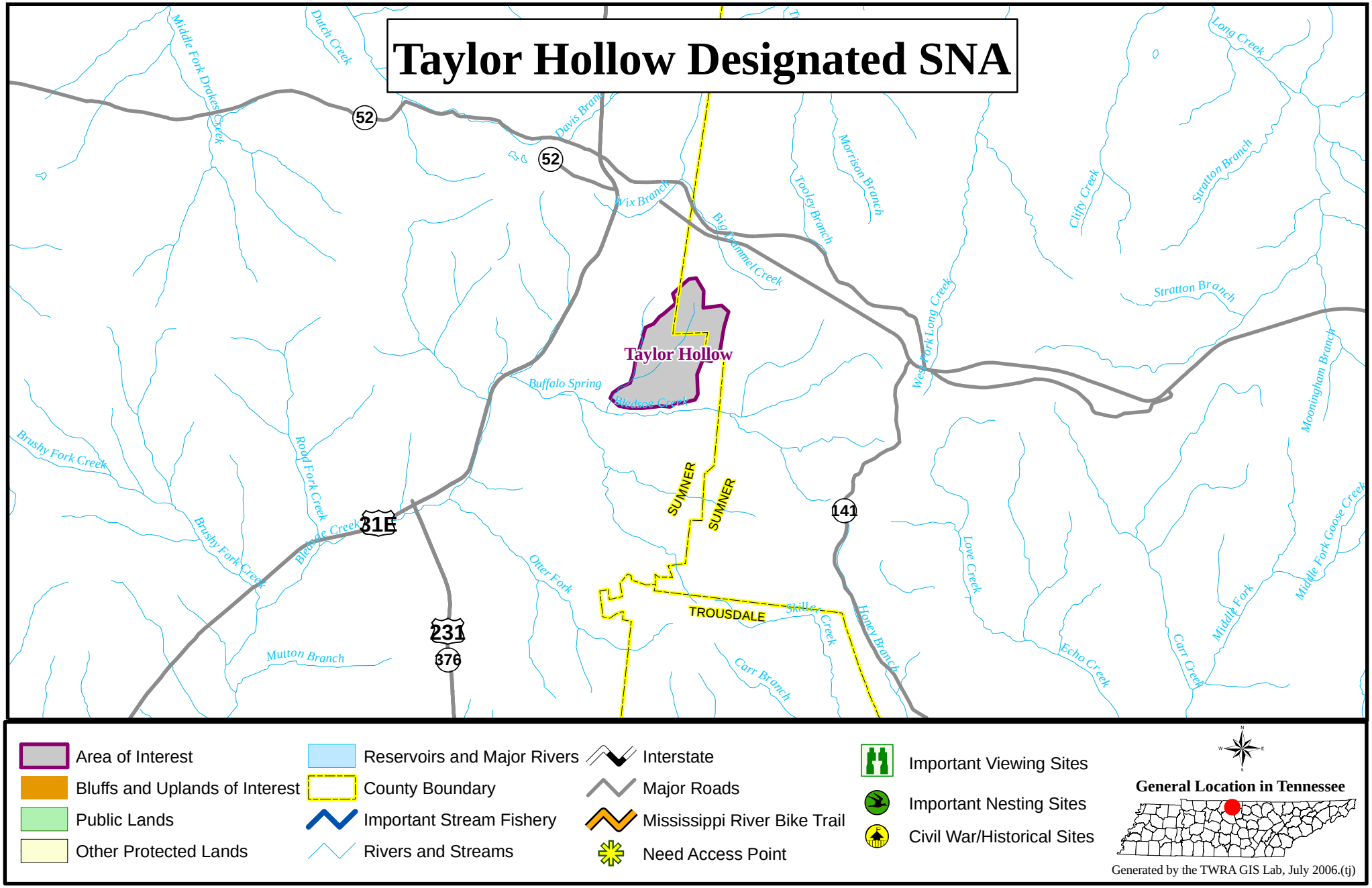
Significance – Site Importance Very High (B2) – The natural area is characterized by narrow winding ridges and separated by steep V-shaped valleys that drop 200-300 feet from the ridge. Its rich hollows provide habitat for a spectacular display of spring wildflowers and is highlighted by a carpet of blue-eyed Mary (*Collinsia verna*). The rare Ozark least trillium (*Trillium pusillum* var. *ozarkanum*) is another noteworthy species that occurs here. It is an evolutionary intermediate between sessile and stalked forms of trillium.

Taylor Hollow's forest community is generally considered old growth though some very selective cutting for commercially important species may have occurred here. The mixed mesophytic forest is particularly interesting because its species composition is very similar to an East Tennessee forest. The forest structure is indicative of old growth with snags and large standing live trees along with decomposing logs and organic forest matter in decay on the forest floor. The vast occurrence of blue-eyed Mary is also indicative of old growth. Blue-eyed Mary is sensitive to forest disturbance like logging and probably was once much more abundant in moist rich Middle Tennessee forests before logging occurred. The mixed mesophytic forest includes sugar maple, tulip poplar, numerous oak and hickory species, ash species, buckeye, basswood, yellow wood, and beech, only to name but a few species. The mixed mesophytic forest is considered the most biologically diverse forest community in the eastern deciduous forest.

Strategy - The strategy for acquisition at Taylor Hollow is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 497 acres at an estimated cost of $810,000

Potential Partners – TDEC and TNC


Taylor Hollow Designated SNA
Taylor Hollow
52
52
31E
231
376
141
SUMNER
SUMNER
TROUSDALE
Middle Fork Drakes Creek
Dutch Creek
Davis Branch
Wix Branch
Big Hemmel Creek
Tooley Branch
Morrison Branch
Cliffy Creek
Long Creek
Stratton Branch
Stratton Branch
West Fork Long Creek
Moonlingham Branch
Middle Fork Goose Creek
Buffalo Spring
Bledsoe Creek
Brushy Fork Creek
Road Fork Creek
Brushy Fork Creek
Bledsoe Creek
Otter Fork
Skillern Creek
Honey Branch
Love Creek
Middle Fork
Echo Creek
Carr Creek
Carr Branch
Mutton Branch
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

THE SWAMPS

Location – (N36.5507, W86.8485) The Swamps is located in Robertson County between North Robertson School and Dozier Church, just north of Springfield.

Description - The site is a wetland located on the Western Highland Rim.

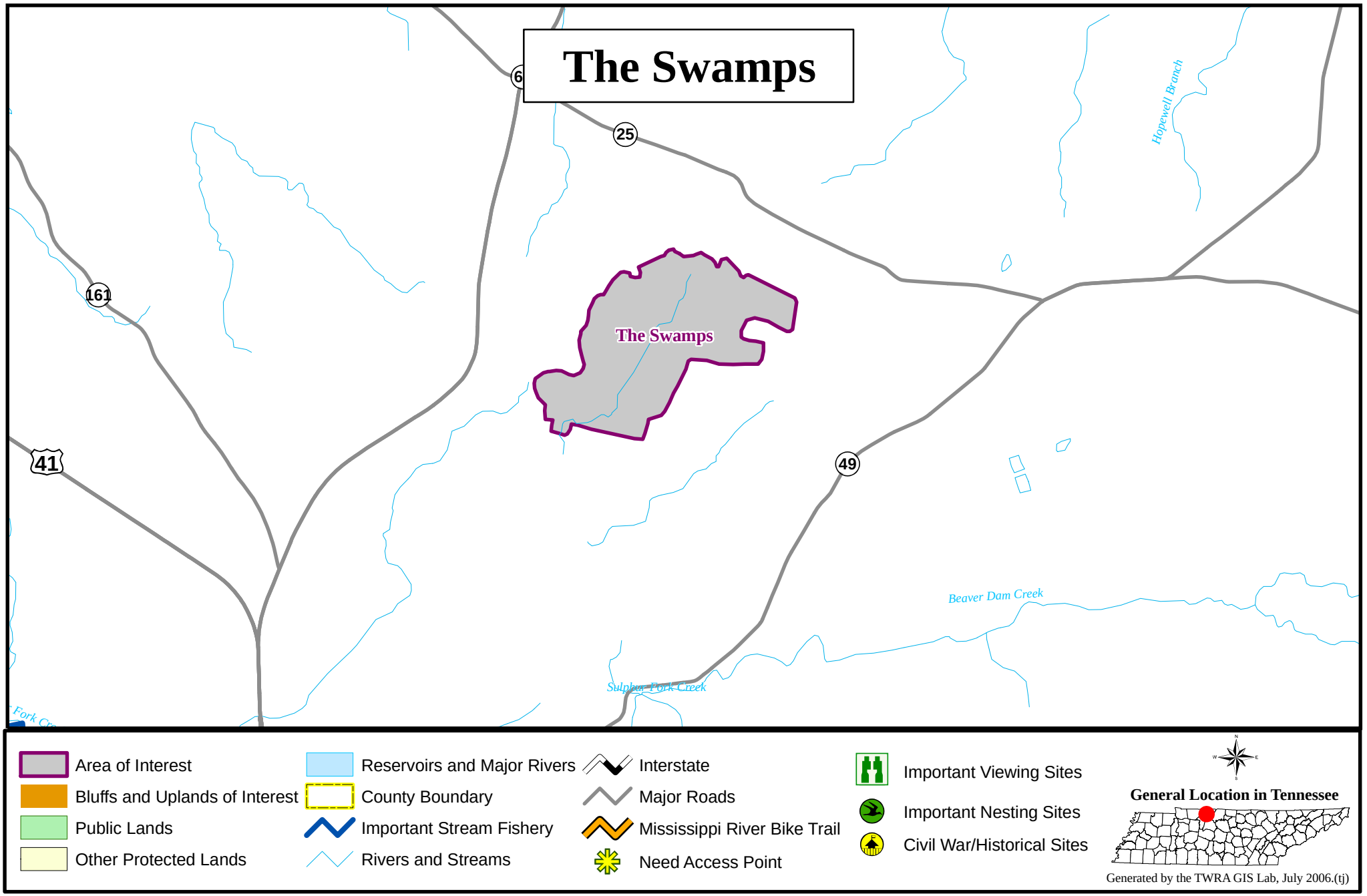
Significance – Site Importance Moderate (B4) – The Swamps is a wet flatwoods that is underlain by poorly drained Guthrie soil series. The area is mostly dry in summer and fall. This is an excellent example of willow oak, red maple & black gum swamp.

Rare elements include *Leucothoe racemosa* and *Ambystoma talpoideum*.

Strategy - The strategy for acquisition at The Swamps is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 433 acres at an estimated cost of $695,000.

Potential Partners – TDEC and TWRA


The Swamps
6
25
161
41
49
The Swamps
Hopewell Branch
Beaver Dam Creek
Sulphur Fork Creek
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

TURNBULL CREEK, TURNBULL CREEK BLUFF, AND SVENSON'S BLUFF

Location – (N36.0796, W87.1699) Turnbull Creek is located in Dickson and Cheatham Counties The design includes 13 stream miles of Turnbull Creek and adjacent habitat from I-40 to the confluence with the Harpeth River in Kingston Springs. This project also includes Turbull Creek Bluff and Svenson's Bluff.

Turnbull Creek – Site Importance High (B3) - Interstate 40 and State Route 96 bridges are close to each other at the most upstream portion of the site. The next bridge crossing is at the confluence of the Harpeth River, thus the stream flows for nearly 13 un-interrupted miles. Soils along the stream are alluvial with sandy silt and some clay, and often have stream-washed gravel. Development along the stream is minimal-but vacation homes have been constructed in the last few years- and much of the landuse is forest or agriculture. The stream is cool, clear, and gently flowing with a gravel substrate typical of pristine streams of Tennessee's Western Highland Rim. Depending upon the amount of stream-scour the adjacent banks contain herbaceous vegetation, floodplain forest, or gravel. Streamside habitat includes floodplain forests of sycamore, with slopes supporting mesic forests of tulip poplar, beech, maples, oaks and hickories. The steep, sheltered cliffs and slopes often contain seeps which support a diversity of herbaceous flora. Robert Kral, retired Vanderbilt University botanist, noted that the spring flora "is showy and involves many ecological types." High-towering bluffs support eastern white pine (*Pinus strobus*).

Turnbull Creek is a relatively pristine aquatic habitat with high species diversity. Even without intensive surveys, three rare species are known from in and along the stream. Finescale darter (*Etheostoma microlepidum*) is ranked as very rare and imperiled globally (G2G3), and occurs only in Tennessee and Kentucky. The species is listed as in-need-of-management. Finescale darter requires swift riffles of gravel-bottomed streams, and Turnbull Creek is one of only nine Tennessee streams known to support this species. Sweet-scented Indian-plantain (*Synosma suaveolens*) grows in the floodplain forests along the stream, is globally rare (G3), and very rare in Tennessee (S2) where it is listed as threatened. Michigan lily (*Lilium michiganense*) is rare in Tennessee (S3) and is listed state threatened. Additional surveys of the less-accessible areas would not only extend the current known range these species, but would likely yield addition rare species.

Svenson's Bluff (Site Importance Moderate - B4) is a remote and rugged bluff which rises approximately 180 feet above the creek. The geological features here are of the Fort Payne Formation and consist of siltstone and shale of Lower Mississippian Age. The bluff face is permeated with seeps and the crest supports a rather mesic but low-growth and scattered forest of beech, eastern red cedar, mountain laurel, tulip poplar, white pine, and oaks.

This area contains one of only two Middle Tennessee populations of white pine. White pine was first reported from this site in 1925. Many of the mature white pines observed at that time are now dead and have deteriorated, but some fertile specimens were found at

last visit (1979) with diameters up to 14.7 inches. Heights of these trees were estimated to be between 20 and 40 feet. Of particular interest was the amount of reproduction occurring at the site. Dozens of seedlings from 3 inches to 3 feet in height, as well as several saplings ranging from 10 to 15 feet high were observed. With only one exception, all individuals were growing on the bluff face, summit, or within 10 feet of the summit.

Turnbull Creek Bluff (Site Importance Moderate - B4) is similar in many respects to Svenson's Bluff, and is located 2.7 miles to the northeast. Turnbull Creek Bluff supports a stand of white pine (*Pinus strobus*). At this point Turnbull Creek flows southeast and makes a sharp turn to the northeast forming this precipitous north-facing bluff. The height of the bluff is about 140 feet (680 ft. elevation) above the creek and the narrow crest slopes into a parallel ravine which drains directly into Gin Creek. In an area consisting of the bluff face, crest, and slopes of the adjacent ravine, white pine occurs as a conspicuous member of the forest community. The largest measured individual was 22.7 inches dbh, but other inaccessible specimens may be larger. At least 20 trees with a minimum dbh of 16 inches and all states of reproduction were observed. Other conspicuous members of the forest overstory and understory include white oak, chinquapin oak, beech, blackgum, mountain laurel, and ironwood.

While investigating the bluffs along Turnbull Creek in the early 1920s, H.K. Svenson was the first botanist to document naturally occurring white pine stands from Tennessee's Western Highland Rim. While revisiting this site in 1979, Drs. Chester and Scott[1] of Austin Peay State University discovered another natural white pine community, now known as Turnbull Creek Bluffs.

Turnbull Creek Bluff and Svenson's bluff contain the few Middle Tennessee populations of white pine, a species more common on the Cumberland Plateau and points east. The sheer bluff and steep gorges allow for dramatic views, and in the words of Svenson the area "has the appearance of a fragment of the northern Alleghenian forest, isolated in Middle Tennessee."

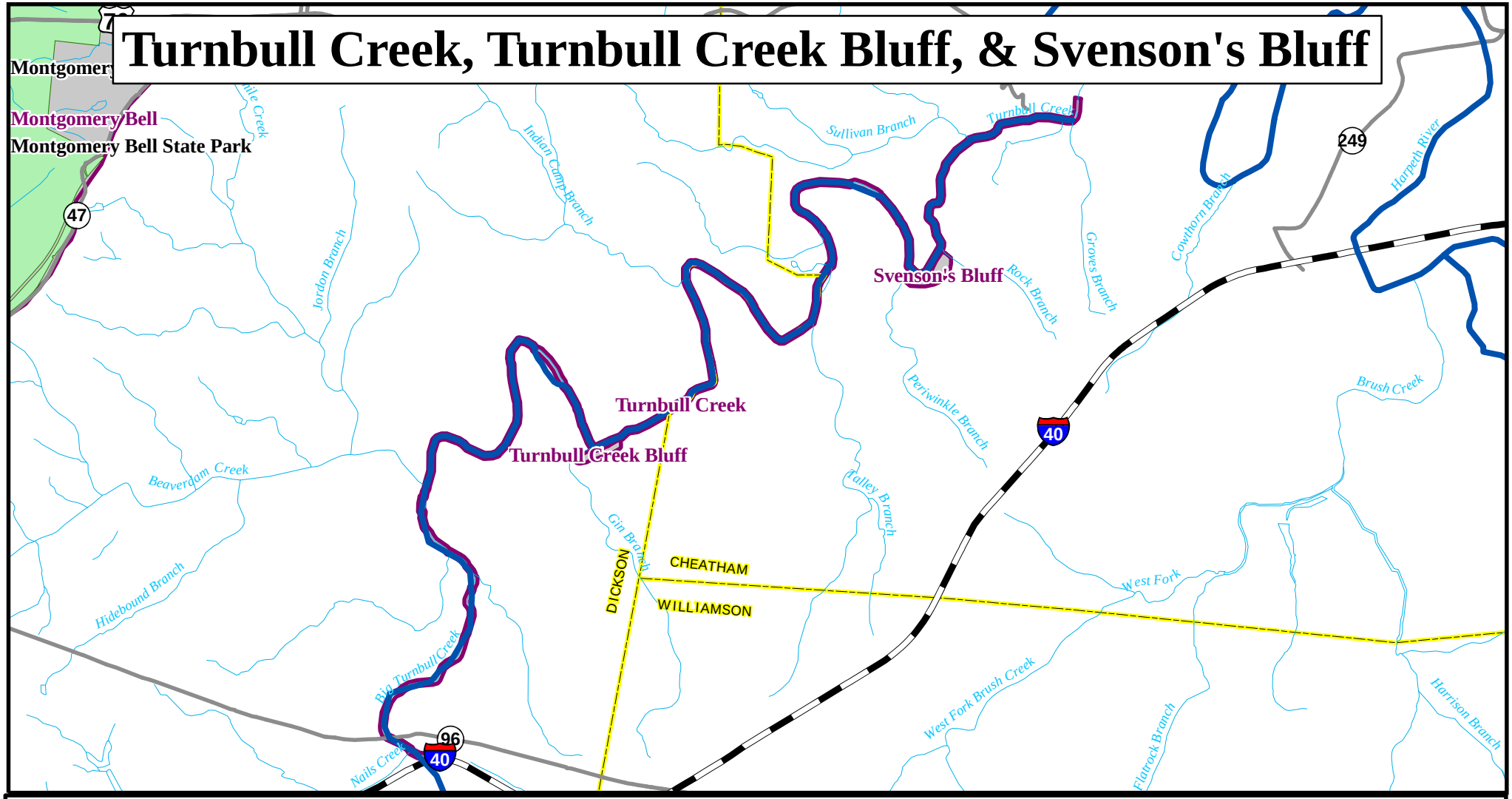
Strategy – For tracts unavailable, perhaps owners can be encouraged to maintain/restore riparian buffers. The strategy for acquisition is to acquire properties within and adjacent to the site boundary for preservation of the plant community. Svenson's Bluff and the similar Turnbull Creek Bluff are both above Turnbull Creek and all three are conservation targets and should be considered together for planning purposes.

Land Protection Needs – 400 acres at an estimated cost of $695,500.

Potential Partners – TDEC and TWRA.

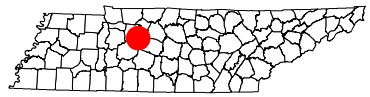
[1] Chester, E.W. and A.F. Scott. 1980. *Pinus strobus* in Middle Tennessee: fifty-four years after discovery. Journal of the Tennessee Academy of Sciences. Vol 55:3 pp. 85-86.

Turnbull Creek, Turnbull Creek Bluff, & Svenson's Bluff



- Area of Interest
- Bluffs and Uplands of Interest
- Public Lands
- Other Protected Lands
- Reservoirs and Major Rivers
- County Boundary
- Important Stream Fishery
- Rivers and Streams
- Interstate
- Major Roads
- Mississippi River Bike Trail
- Need Access Point
- Important Viewing Sites
- Important Nesting Sites
- Civil War/Historical Sites

General Location in Tennessee



Generated by the TWRA GIS Lab, July 2006.(tj)

TYNES GLADE

Location – (N36.0047, W86.3575) Tynes Glade is located in Rutherford County on the north side of Alsup Mill Road (Hebron Road) adjacent to the roadway about 0.5 miles east of US 231, south of Lebanon. (See Collins Trifolium/Rocky Hill Road Glades map)

Description – The site encompasses approximately 30 acres adjacent to the road. There is a private home on the edge of the property. The area includes limestone glades with outcroppings, old pasture, and cedar thickets. A small drainage flows into a series of sinkholes in the middle of the site.

Significance – Site Importance is High (B3). An important population of the federally endangered Tennessee coneflower (*Echinacea tennesseensis*) occurs at this site. A total of 2,529 flowering stems were counted in 2005. Tennessee coneflower is globally rare and imperiled (G2) and only occurs in Middle Tennessee limestone cedar glade and barrens habitats. An important part of recovery for this endangered plant is protection through public ownership of all known Tennessee coneflower sites. There are currently only a few sites that have not been protected.

Strategy – The strategy for acquisition is to acquire properties within and adjacent to the site design (site boundary) for access or access control, and preservation and recovery of the federally endangered Tennessee coneflower.

Land Protection Needs – Maximum of 30 acres at an estimated cost of $50,000.

Potential Partners – TDEC and USFWS.

TYREE SPRINGS

Location – (N36.4331, W86.6556) Tyree Springs is approximately 35-acres located in Sumner County south of Whitehouse off Hwy 31.

Description - Located on the Western Highland Rim, this site is an undeveloped forested tract of land except for a rustic cabin on the Cato tract and concrete pumphouse at the spring on the Cain tract. Two small hollows with north-south running branches that flow into Drakes Creek comprise about half of this site. Each branch crosses under Tyree Springs Road near its junction with Drakes Creek. About 200 feet of relief on the shaley slopes of the two hollows provide habitat for a rich assemblage of plant species typical of the western mixed mesophytic forest found in other undisturbed hollows of the Highland Rim. Tree species observed in the hollows include beech, sugar maple, tulip poplar, sycamore, red oak, white oak, chinquapin oak, white ash, and hickories.

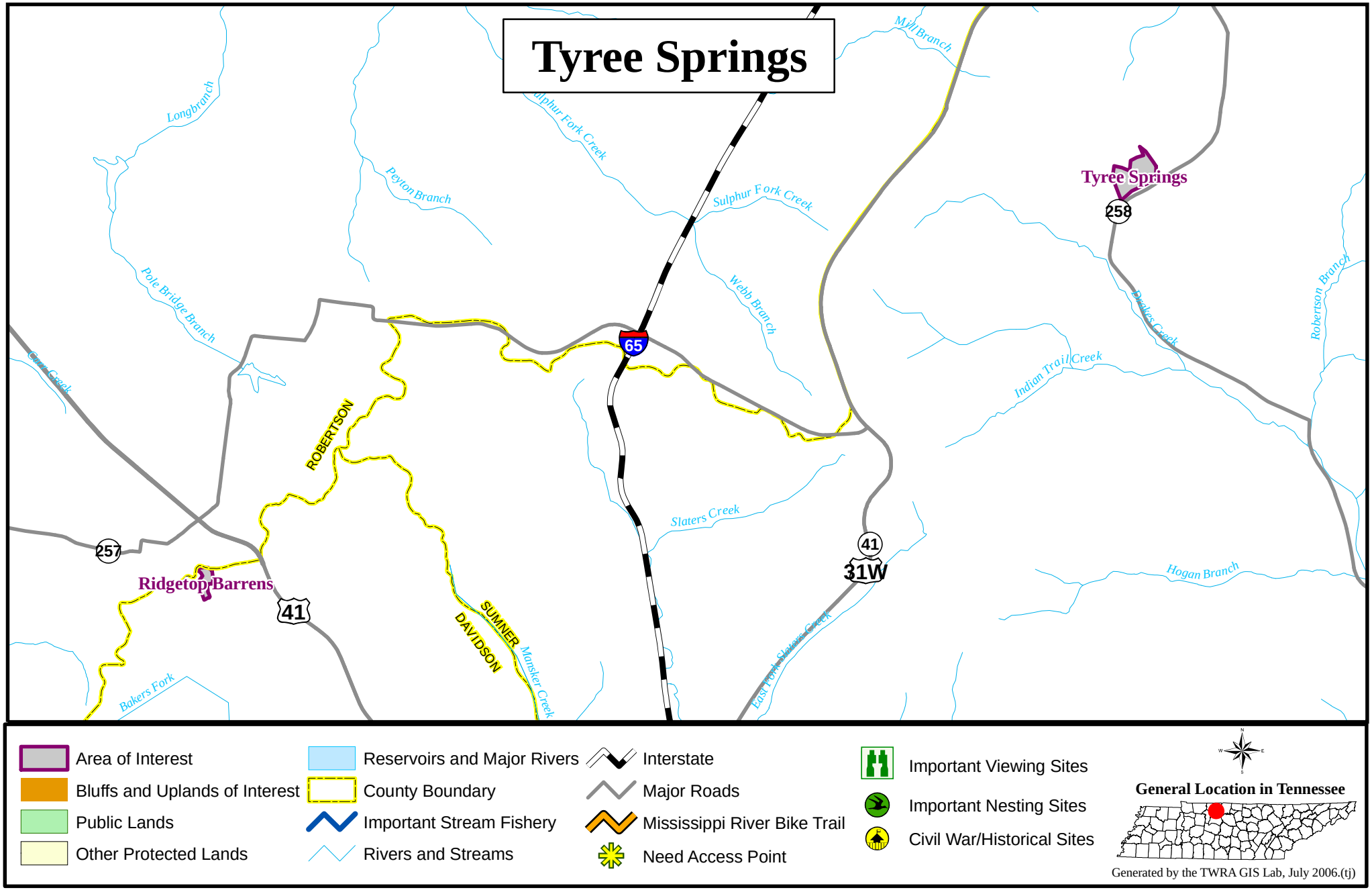
Significance – Site Importance Moderate (B4) – The hollows provide habitat for a rich assemblage of plant species including the state threatened Michigan lily (*Lilium michiganense*), goldenseal (*Hydrastis canadense*), and ginseng (*Panax quinquefolius*), which are both listed as state special concern – commercially exploited. A significant aspect of the westernmost hollow is the prevalence of large chinquapin oaks in its upper half. The easternmost hollow is notable as a site for a large population of Guyandotte beauty (*Synandra hispidula*). The population consists of 2-3 thousand plants in the upper end of the hollow. A large population of twinleaf (*Jeffersonia diphylla*), uncommon this far west in Tennessee, occurs in this hollow as well. Another feature of this hollow is its three small waterfalls with 8-12 foot drops.

In addition to the rich flora at this site, two notable rare animals have been documented from Tyree Springs. These are the northern pine snake (*Pituophis melanoleucus melanoleucus*), a state threatened species, and hellbender (*Cryptobranchus alleganiensis*), which is listed as in-need-of-management.

Strategy - The strategy for acquisition at Tyree Springs is to acquire properties within and adjacent to the site design (site boundary) for access or access control, and preservation of rare species and representative communities. Preservation of rare species, communities and wildlife will provide educational opportunities for the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 35 acres at an estimated cost of $52,500.

Potential Partners – TDEC.


Tyree Springs
Longbranch
Peyton Branch
Pole Bridge Branch
Sulphur Fork Creek
Webb Branch
Mill Branch
Tyree Springs
258
Robertson Branch
Indian Trail Creek
Slaters Creek
Hogan Branch
East Fork Slaters Creek
ROBERTSON
SUMNER
DAVIDSON
Manskers Creek
Bakers Fork
Ridgetop Barrens
257
41
65
31W
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
County Boundary
Important Stream Fishery
Rivers and Streams
Interstate
Major Roads
Mississippi River Bike Trail
Need Access Point
Important Viewing Sites
Important Nesting Sites
Civil War/Historical Sites
General Location in Tennessee
Generated by the TWRA GIS Lab, July 2006.(tj)

WALTERHILL FLOODPLAIN SNA

Location – (N35.9397, W86.3762) Walterhill Floodplain is located in Rutherford County 2 miles north of the Veterans Administration Hospital on Highway 231.

Description - Located in the Central Basin, Walterhill Floodplain SNA is a 34-acre natural area located in Rutherford County. It is uniquely different from most natural areas in that it is primarily comprised of an agricultural field. The area lies south of the Stones River and east of Hwy 231.

Significance – Site Importance Very High (B2) – Walterhill Floodplain's main function as a natural area is to protect and maintain a healthy population of a rare plant species, the Stones River bladderpod (*Lesquerella stonensis*). This plant grows along the floodplains of Stones River from which it takes its name. A small winter annual in the mustard family, Stones River bladderpod produces a profusion of white flowers in early spring. After the plant flowers, it quickly dies leaving behind only its seeds which lie dormant on or near the surface of the soil throughout the summer months. In the early fall, those seeds that have found their way into the soil will germinate and grow a small rosette of leaves. The plant remains in this state throughout the cold winter months but will grow very slowly, particularly on warmer days. In late winter the plants react to the warming temperatures and lengthening days by entering a period of rapid growth. This late winter growth period gives the bladderpod a head start on most other plants, effectively avoiding competition for sunlight from other plants later in the spring.

Stones River bladderpod requires some level of soil disturbance in order for the seeds to be incorporated into the soil. Historically, seeds were distributed in the soil by scouring of floodwaters or by large grazing animals. Presently, the best soil disturbance results from row crop agricultural practices. In a unique partnership between Middle Tennessee State University's College of Agriculture (MTSU) and the Tennessee Natural Areas Program, MTSU cooperatively farms this land in a way that ensures the survival of this plant. After May 15th, the area is lightly plowed and then planted in a summer hay crop that is harvested in late summer. This agricultural activity takes place after the bladderpod completes its lifecycle in the spring, but before its seeds germinate in the fall. This unique partnership between agriculture and rare plant conservation is helping ensure the long-term survival of this unique plant.

Strategy - The strategy for Walterhill Floodplain is to acquire properties within and adjacent to the site design boundary for access or control, watershed protection, and preservation of rare species and representative communities. Preservation of these rare species will provide educational opportunities for area colleges, and the general public.

Land Protection Needs – None at this time.

Potential Partners – TDEC, USFWS and MTSU.

WAYSIDE SWAMP

Location – (N35.5375, W86.0205) Wayside Swamp is approximately 46 acres located in Coffee County five miles northeast of Manchester on Hwy. 55. (See Summitville Mountain Spring map)

Description - Located on the Eastern Highland Rim, this site consists primarily of flat poorly drained forestland dominated by willow oak, sweetgum and sugar maple.

Significance – Site Importance Moderate (B4) - This wetland was surveyed by Tom Patrick as part of a survey of potential natural areas in the Cumberland River Drainage (Patrick 1979). It is close to the settlement of Wayside, and is more or less contiguous to other natural vegetation stretching south along and on both sides of the railroad tracks, to Forest Mill Pond (discussed above). This area has probably not been visited by botanists of DNA since at least the mid-1980's. The present condition of the swamp forest (relative to timber or hydrology) is not known. Data on the communities at the site have not been obtained, except that it probably represents the typical wetland oak-dominated swamp of The Barrens.

Strategy - The strategy for acquisition at Wayside Swamp is to acquire properties within and adjacent to the site design (site boundary) for access or access control, watershed protection, and preservation of rare species and representative communities of Barrens vegetation. Preservation of these rare species and wildlife will provide educational opportunities for area colleges, universities, and the general public, and work toward preserving Tennessee's natural heritage.

Land Protection Needs – 47acres at an estimated cost of $65,000

Potential Partners – TWRA and TDEC.

WILLOUGHBY TRACT

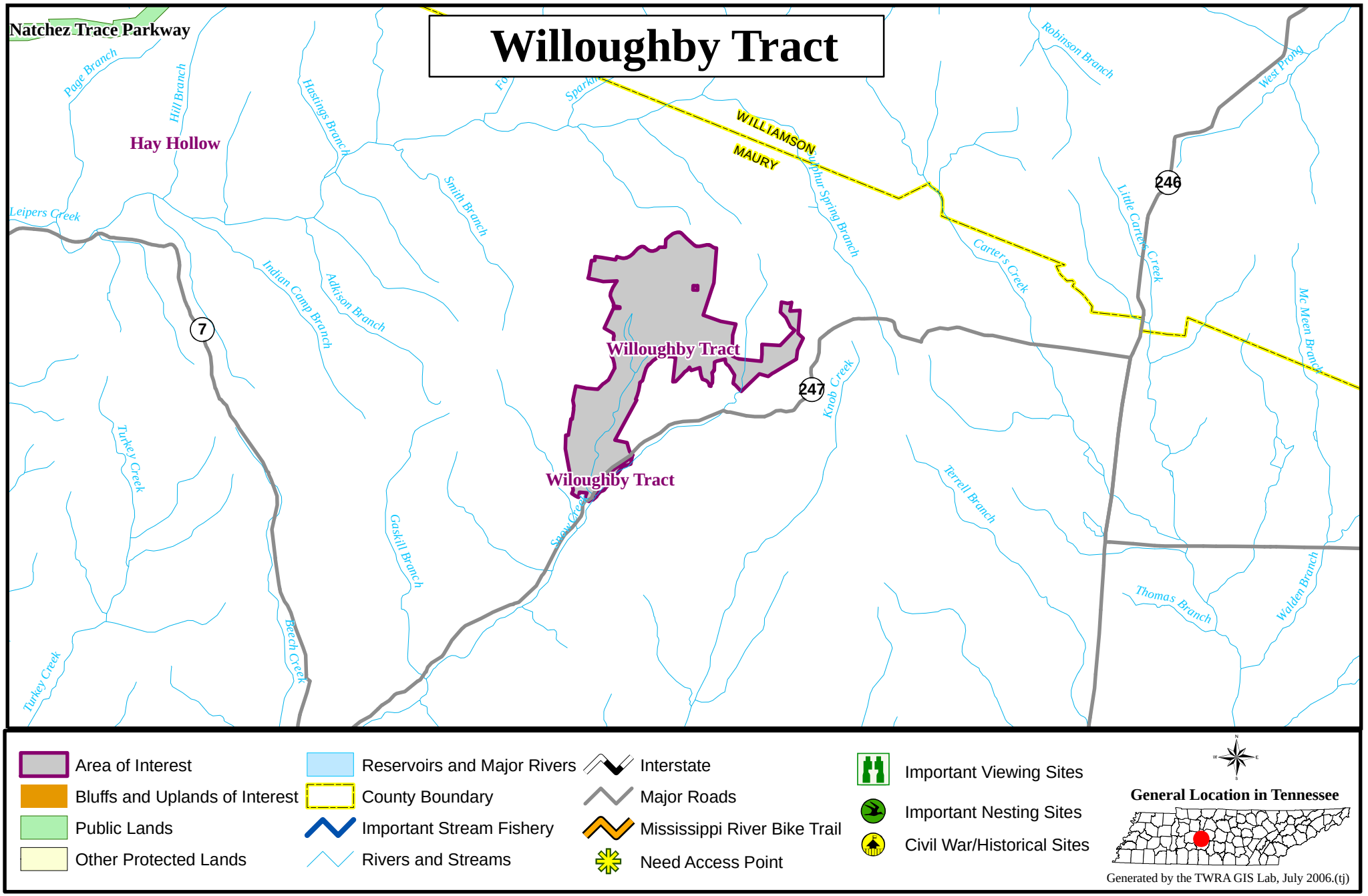
Location – (N35.7769, W87.0775) The 1,009 acres of the Willoughby Tract are located in Maury County. The property is on the Western Highland Rim along Chestnut Ridge Road near the community of Theta.

Description - Eighty-eight percent (890 acres) of this land is composed of mature oak forest. The remainder of the acreage is composed of pasture and rotation agricultural land. There is also a lake on the property.

Significance - Oak forests on the Western Highland Rim are a conservation priority because of their growing rarity. Extensive mature forests are a requirement for high priority bird species such as cerulean warbler (*Dendroica cerulea*). Cerulean warblers are listed as a species of Greatest Conservation Need (GCN) in TWRA's Comprehensive Wildlife Conservation Strategy. Cerulean warblers have been heard and seen in this area by Tommy Edwards, TWRA Wildlife Manager at Yanahli WMA, during Tennessee Ornithological Society Spring Bird Counts. This property is especially important to neotropical migrants. Blue-winged warbler, prairie warbler, prothonotary warbler, Kentucky warbler, and hooded warbler are all GCN species and have been recorded regularly at this site.

Lands Protection Needs – 1,009 acres at an estimated cost of $1,650,000.

Potential Partners - The Land Trust for Tennessee and TWRA.


Willoughby Tract
Natchez Trace Parkway
Page Branch
Hill Branch
Hay Hollow
Hastings Branch
Leipers Creek
Indian Camp Branch
Addison Branch
Smith Branch
Turkey Creek
Gaskill Branch
Beech Creek
Turkey Creek
WILLIAMSON
MAURY
Sulphur Spring Branch
Carter's Creek
Robinson Branch
West Prong
Little Carter Creek
Mc Meen Branch
Knob Creek
Terrell Branch
Thomas Branch
Walden Branch
Willoughby Tract
Wiloughby Tract
7
246
247
Area of Interest
Bluffs and Uplands of Interest
Public Lands
Other Protected Lands
Reservoirs and Major Rivers
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